As confidentially submitted with the Securities and Exchange Commission on July 26, 2019
Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Beam Therapeutics Inc.
(Exact name of registrant as specified in its charter)

Delaware	2836	81-5238376
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

26 Landsdowne Street
Cambridge, MA 02139
857-327-8775
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

John Evans
Chief Executive Officer
26 Landsdowne Street
Cambridge, MA 02139
857-327-8775
(Name, address, including zip code, and telephone number, including area code, of agent for service)

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Approximate date of commencement of proposed sale to the public:
As soon as practicable after the effective date of this Registration Statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐ Accelerated filer ☐ Non-accelerated filer ☒ Smaller reporting company ☐
Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Proposed maximum aggregate offering price(1)	Amount of registration fee(2)
Common Stock, par value $0.0001 per share	$	$

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended. Includes the offering price of shares that the underwriters may purchase pursuant to an option to purchase additional shares.

(2) Calculated pursuant to Rule 457(o) based on an estimate of the proposed maximum aggregate offering price.

The registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to completion, dated , 2019

Preliminary prospectus

shares

Beam Therapeutics Inc.

Common stock

This is an initial public offering of shares of common stock of Beam Therapeutics Inc. We are selling shares of our common stock. The initial public offering price is expected to be between $ and $ per share.

We have applied for listing of our common stock on The Nasdaq Global Market under the symbol BEAM.

We are an "emerging growth company" under federal securities laws and are subject to reduced public company reporting requirements. See "Prospectus Summary—Implications of Being an Emerging Growth Company."

	Per share	Total
Initial public offering price	$	$
Underwriting discounts and commissions(1)	$	$
Proceeds to Beam Therapeutics Inc., before expenses	$	$

(1) See "Underwriting" for additional disclosure regarding underwriting compensation.

We have granted the underwriters an option for a period of 30 days to purchase up to additional shares of common stock from us at the initial public offering price, less underwriting discounts and commissions.

Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page 13 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities, or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the shares to purchasers on or about , 2019.

Joint bookrunning managers

J.P. Morgan **Jefferies** **Barclays**

Lead manager

Wedbush PacGrow

, 2019.

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Neither we nor the underwriters have authorized anyone to provide any information other than that contained in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We and the underwriters are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus, regardless of the time of delivery of this prospectus or any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

For investors outside of the United States: Neither we nor the underwriters have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. Persons outside of the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside of the United States.

Through and including , 2019 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a

prospectus. This delivery requirement is in addition to the obligation of dealers to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

Trademarks

We use BEAM, REPAIR and RESCUE and other marks as trademarks in the United States and/or in other countries. This prospectus contains references to our trademarks and service marks and to those belonging to other entities. Solely for convenience, trademarks and trade names referred to in this prospectus, including logos, artwork and other visual displays, may appear without the ® or ™ symbols, but such references are not intended to indicate in any way that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use or display of other entities' trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other entity.

Market and industry data

Unless otherwise indicated, information contained in this prospectus concerning our industry and the markets in which we operate, including our general expectations, market position and market opportunity, is based on our management's estimates and research, as well as industry and general publications and research, surveys and studies conducted by third parties. We believe that the information from these third-party publications, research, surveys and studies included in this prospectus is reliable. Management's estimates are derived from publicly available information, their knowledge of our industry and their assumptions based on such information and knowledge, which we believe to be reasonable. This data involves a number of assumptions and limitations which are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in "Risk Factors." These and other factors could cause our future performance to differ materially from our assumptions and estimates.

Prospectus summary

This summary highlights information included elsewhere in this prospectus. This summary does not contain all the information you should consider before investing in our common stock. You should read and consider this entire prospectus carefully, including the sections titled "Risk Factors," "Cautionary Note Regarding Forward-Looking Statements" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and the related notes included elsewhere in this prospectus, before making any investment decision. Unless the context otherwise requires, the terms "Beam," "Beam Therapeutics," the "Company," "we," "us" and "our" relate to Beam Therapeutics Inc., together with its consolidated subsidiaries.

Overview

We are a biotechnology company committed to creating a new class of precision genetic medicines based on our proprietary base editing technology, with a vision of providing life-long cures to patients suffering from serious diseases.

The most common class of genetic mutations are errors of a single base, known as point mutations, representing approximately 58% of all the known genetic errors associated with disease. Other natural genetic variations of a single base among human populations, revealed by population-level genomic studies, are known to protect against disease. To maximize the impact of these genetic insights, the ability to alter the human genome at the foundational level of genetic information – a single base – is crucial.

In the last decade, the field of genetic medicine has reached an inflection point, with groundbreaking advances in gene therapy, cell therapy, oligonucleotides, and, more recently, gene editing. While these technologies represent dramatic advancements for genetic medicines, the ability to edit genes at the single base level has been elusive.

Our base editing platform

Existing gene editing technologies, such as CRISPR, Zinc Fingers, Arcuses, and TAL Nucleases, operate by creating a targeted double-stranded break in the DNA, and then rely on cellular mechanisms to complete the editing process. Such approaches can be effective in the disruption of gene expression; however, they lack control of the editing outcome, have low efficiency of precise gene correction, and can result in unwanted DNA modifications.

Our proprietary base editing technology enables a potential new class of precision genetic medicines that targets a single base in the genome without making a double-stranded break in the DNA. This approach uses a chemical reaction designed to create precise, predictable and efficient genetic outcomes at the targeted sequence, which we believe will dramatically increase the impact of gene editing for a broad range of therapeutic applications. We believe we will be able to rapidly advance our portfolio of novel base editing programs by building on the significant recent advances in the field of genetic medicine.

Our novel base editors have two principal components that are fused together to form a single protein: (i) a CRISPR protein, bound to a guide RNA, that leverages the established DNA-targeting ability of CRISPR, but modified to not cause a double-stranded break, and (ii) a base editing enzyme, such as a deaminase, which carries out the desired chemical modification of the target DNA base.

If existing gene editing approaches are "scissors" for the genome, our base editors are "pencils," erasing and rewriting one letter in the gene.

We believe the advantages of our base editing platform over existing approaches in gene editing and gene therapy include:

- Highly precise and predictable gene editing, designed to make only one type of base edit at the desired target location
- Highly efficient and therapeutically relevant levels of gene correction, which are generally unachievable by nuclease-based methods
- Broad applicability in a wide range of cell types, including both dividing and non-dividing cells
- Direct chemical modification of DNA with no requirement for delivery of the corrected DNA sequence
- Avoidance of unwanted DNA modifications associated with double-stranded breaks, including gene disruptions, translocations, or deletions
- Permanent editing of genes, creating the potential for a life-long therapeutic outcome
- Preservation of natural regulation and a normal number of copies of the gene in the cell by modification of genes in their native genomic setting
- Versatile and modular product engine that can target a different gene sequence with the same base editor and a different guide RNA

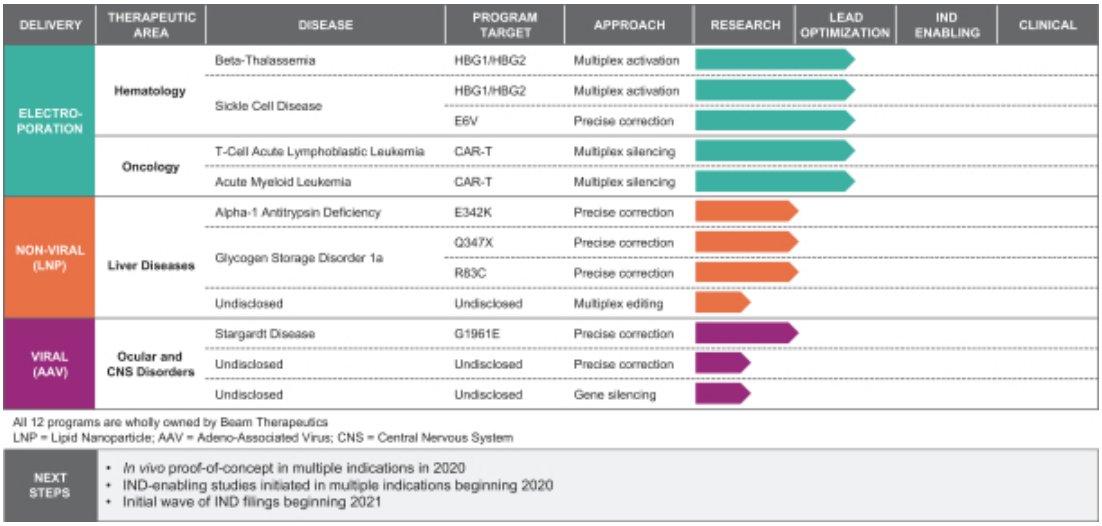
We believe the advantages of our base editing platform will enable diverse therapeutic applications. These include:

- Gene correction to repair point mutations
- Gene modification to edit in naturally-occurring single base variations within genes known to protect against or modify risk for a disease
- Gene silencing and gene activation by altering the regulatory regions of genes
- Multiplex editing of several genes simultaneously

Our Portfolio

To unlock the full potential of our base editing technology across a wide range of therapeutic applications, we are pursuing a comprehensive suite of clinically validated delivery modalities in parallel. For a given tissue type, we use the delivery modality with the most compelling biodistribution. Our programs are organized by delivery modality into three distinct pipelines: electroporation for efficient delivery to blood cells and immune cells *ex vivo*; lipid nanoparticles, or LNPs, for non-viral *in vivo* delivery to the liver and potentially other organs in the future; and adeno-associated viral vectors, or AAV, for viral delivery to the eye and central nervous system, or CNS. We believe our base editing programs are well-positioned to leverage the clinical, regulatory, and manufacturing advancements made to date across gene therapy, gene editing, and delivery modalities to accelerate progression to clinical trials and potential approval.

We believe a diversified portfolio across multiple delivery pipelines will maximize our ability to provide life-long therapies to patients over the broadest range of diseases possible. Our current portfolio includes the following 12 programs:



For the majority of our 12 programs, we have demonstrated base editing of cells *in vitro* at therapeutically relevant levels, which we believe has the potential to be disease-modifying for each disease. We have also successfully demonstrated feasibility of base editing with each of our three delivery modalities in relevant cell types for electroporation and AAV and *in vivo* in mice for LNP.

We expect to achieve preclinical proof-of-concept *in vivo*, which would include engraftment of *ex vivo* base edited human cells in mice or base editing with AAV or LNP in non-human primates, for multiple programs in 2020. If successful, this will allow us to initiate investigational new drug, or IND, enabling studies for multiple programs beginning in 2020, potentially leading to an initial wave of IND filings beginning in 2021.

Ex Vivo Electroporation for Hematology: Sickle Cell Disease and Beta-Thalassemia

Sickle cell disease is a severe inherited blood disease caused by a single point mutation in the beta globin gene at the sixth amino acid, or E6V mutation, affecting an estimated 100,000 individuals in the United States. Beta-thalassemia is another inherited blood disorder characterized by severe anemia caused by reduced production of functional hemoglobin due to insufficient expression of the beta globin protein, which affects an estimated 1:100,000 worldwide, including 1:10,000 individuals in Europe.

We are using base editing to pursue two complementary approaches to treating sickle cell disease and one to treat beta-thalassemia. Our first approach is to reproduce the effects of specific, naturally-occurring base changes in the regulatory elements of the gene for fetal hemoglobin, or HbF. High levels of HbF are known to confer disease protection in sickle cell or beta-thalassemia patients. By recreating the precise genetic variants which naturally occur in certain humans, we have demonstrated greater upregulation of HbF in preclinical studies than what has been demonstrated with other gene editing approaches, which we believe will result in superior clinical outcomes.

Our second base editing approach for sickle cell disease is a direct correction of the causative E6V mutation. By making a single base edit, we have demonstrated the ability to create the naturally-occurring “Makassar”

variant of hemoglobin, which has the same function as the wild-type variant and does not cause sickle cell disease. Distinct from other approaches, cells that are successfully edited in this way are fully corrected, no longer containing the sickle protein.

Ex Vivo Electroporation for Multiplex Editing: CAR-T Cell Therapies for T-ALL/AML

CAR-T cell therapy is a form of immunotherapy that harness the power of T cells to recognize and kill tumors. Autologous CAR-T therapies, generated using cells taken directly from the patient, have demonstrated dramatic efficacy in certain patients with relapsed or refractory hematologic cancers, but lack efficacy in solid tumors. However, these therapies have several limitations including lack of patient eligibility, delays in treatment, and unscalable and costly manufacturing processes. “Off-the-shelf” allogeneic therapies are manufactured from a healthy donor, but may be limited by graft-versus-host disease and host-versus-graft rejection in patients, requiring gene editing to address these challenges. Additional genetic modifications may further improve their therapeutic potential by enhancing persistence, preventing fratricide, addressing immunosuppressive environmental factors, and expanding the range of malignancies addressable by CAR-T therapy.

While nuclease-based editing can knock out multiple genes at the same time, doing so requires simultaneous double-stranded breaks across the genome, which magnifies the risk of chromosomal rearrangements and may impact cell viability. We have demonstrated the ability of base editors to perform simultaneous multiplex editing with very high efficiencies and without any detectable chromosomal rearrangements. We intend to engineer allogeneic CAR-T products by multiplex editing T cells from healthy donors, endowing the CAR-T cells with a combination of features that may dramatically enhance their therapeutic potential. The initial indications that we plan to target with these product candidates are relapsed, refractory, pediatric T-cell Acute Lymphoblastic Leukemia, or T-ALL, and pediatric Acute Myeloid Leukemia, or AML. We believe the versatility of our base editing platform positions us to rapidly expand our portfolio of advanced cell therapies beyond the initial product candidates we may develop, with long-term potential for highly engineered allogeneic cell therapies in hematologic and solid tumors as well as other immune-driven disorders.

Non-Viral Delivery for Liver Diseases: Alpha-1 Antitrypsin Deficiency and Glycogen Storage Disorder 1a

Our lead programs in our LNP pipeline include making precise gene corrections for two severe genetic disorders:

Alpha-1 Antitrypsin Deficiency, or AATD, is a severe inherited genetic disorder that can cause progressive lung and liver disease. The most severe form of AATD arises when a patient has a point mutation in both copies of the SERPINA1 gene at amino acid 342 position (E342K, also known as “Z” allele). It is estimated that approximately 60,000 individuals in the United States have two copies of the Z allele. There are currently no curative treatments for patients with AATD. Our AATD base editing program has demonstrated the ability to directly correct the E342K point mutation, potentially addressing both the lung and liver components of the disease.

Glycogen Storage Disease Type 1A, also known as Von Gierke disease, is an inborn disorder of glucose metabolism caused by mutations in the G6PC gene, which results in low blood glucose levels that can be fatal if patients do not adhere to a strict regimen of slow-release forms of glucose, administered every one to four hours (including overnight). There are no disease-modifying therapies available for patients with GSD1a. Our base editors have demonstrated the ability to repair the two most prevalent mutations that cause the disease, R83C and Q347X, representing approximately 59% of all GSD1a patients.

Viral Delivery for Ocular and CNS Disorders: Stargardt Disease

Stargardt disease is an inherited disorder of the central region of the retina, causing progressive vision loss typically beginning in adolescence and ultimately leading to central and night vision blindness. The most prevalent mutation in the ABCA4 gene that leads to Stargardt disease is the G1961E point mutation, with approximately 5,500 individuals in the United States affected by this mutation. Our base editing approach, delivered through AAV viral vectors, has demonstrated the ability to repair the G1961E point mutation.

We have also initiated exploratory efforts in a program targeting a disease of the central nervous system.

Our Strategy

Our goal is to become the leading company in precision genetic medicines by discovering, developing, manufacturing, and ultimately commercializing a new class of medicines through our proprietary base editing technology, with the vision of providing life-long cures to patients suffering from serious diseases. Key components of our strategy are as follows:

- Build a highly innovative, fully integrated genetic medicines company
- Advance “waves” of programs into clinical development through a highly efficient discovery and development engine
- Access the broadest range of therapeutic areas by leveraging clinically validated delivery modalities
- Reinforce our leadership position in base editing through strategic investment in our platform and new technologies
- Further expand patient access to our medicines through innovative strategic partnerships with both established and emerging companies
- Maintain a culture of innovation that captures the best of academic science and translational medicine

Since our founding in 2017, we have attracted a talented group of industry experts and scientists as part of a highly innovative organization of over 100 employees. We have developed and consolidated significant technology and intellectual property covering the elements of base editing, as well as additional gene editing technologies and delivery modalities, with exclusive licenses from Harvard University, The Broad Institute, Editas Medicine, and Bio Palette. In addition, we have raised approximately $224 million in capital from premier venture capital funds, healthcare-dedicated funds, major mutual funds, and other leading investors that share our vision to build a highly innovative, fully integrated genetic medicines company.

Risks associated with our business

Our business is subject to a number of risks of which you should be aware before making an investment decision. These risks are discussed more fully in the “Risk Factors” section of this prospectus immediately following this prospectus summary. These risks include the following:

- Base editing is a novel technology that is not yet clinically validated for human therapeutic use. The approaches we are taking to discover and develop novel therapeutics are unproven and may never lead to marketable products.
- We have incurred significant losses since inception. We expect to incur losses for the foreseeable future and may never achieve or maintain profitability.

- We will need substantial additional funding. If we are unable to raise capital when needed, we would be forced to delay, reduce, or eliminate our research and product development programs or future commercialization efforts.
- Our short operating history may make it difficult for you to evaluate the success of our business to date and to assess our future viability.
- We may not be successful in our efforts to identify and develop potential product candidates. If these efforts are unsuccessful, we may never become a commercial stage company or generate any revenues.
- We are very early in our development efforts. All of our product candidates are still in preclinical development or earlier stages and it will be many years before we or our collaborators commercialize a product candidate, if ever. If we are unable to advance our product candidates to clinical development, obtain regulatory approval and ultimately commercialize our product candidates, or experience significant delays in doing so, our business will be materially harmed.
- If any of the product candidates we may develop or the delivery modalities we rely on cause serious adverse events, undesirable side effects or unexpected characteristics, such events, side effects or characteristics could delay or prevent regulatory approval of the product candidates, limit the commercial potential, or result in significant negative consequences following any potential marketing approval.
- We face significant competition in an environment of rapid technological change, and there is a possibility that our competitors may achieve regulatory approval before us or develop therapies that are safer or more advanced or effective than ours, which may harm our financial condition and our ability to successfully market or commercialize any product candidates we may develop.
- We have not tested any of our proposed delivery modes and product candidates in clinical trials and any favorable preclinical results are not predictive of results that may be observed in clinical trials.
- Adverse public perception of genetic medicines, and gene editing and base editing in particular, may negatively impact regulatory approval of, and/or demand for, our potential products.
- The gene editing field is relatively new and is evolving rapidly. We are focusing our research and development efforts on gene editing using base editing technology, but other gene editing technologies may be discovered that provide significant advantages over base editing, which could materially harm our business.
- Because base editing is novel and the regulatory landscape that will govern any product candidates we may develop is uncertain and may change, we cannot predict the time and cost of obtaining regulatory approval, if we receive it at all, for any product candidates we may develop.
- Genetic medicines are novel, and any product candidates we develop may be complex and difficult to manufacture. We could experience delays in satisfying regulatory authorities or production problems that result in delays in our development or commercialization programs, limit the supply of our product candidates we may develop, or otherwise harm our business.
- We contract with third parties for the manufacture of materials for our research programs and preclinical studies and expect to continue to do so for clinical trials and for commercialization of any product candidates that we may develop. This reliance on third parties increases the risk that we will not have sufficient quantities of such materials, product candidates, or any medicines that we may develop and commercialize, or that such supply will not be available to us at an acceptable cost, which could delay, prevent, or impair our development or commercialization efforts.

- Because we are developing product candidates in the field of genetics medicines, a field that includes gene therapy and gene editing, in which there is little clinical experience, there is increased risk that the FDA, the EMA, or other regulatory authorities may not consider the endpoints of our clinical trials to provide clinically meaningful results and that these results may be difficult to analyze.
- If we are unable to obtain and maintain patent protection for any product candidates we develop and for our technology, or if the scope of the patent protection obtained is not sufficiently broad, or if we or our licensors are unable to successfully defend our or our licensors' patents against third-party challenges or enforce our or our licensors' patents against third parties our competitors could develop and commercialize products and technology similar or identical to ours, and our ability to successfully commercialize any product candidates we may develop, and our technology may be adversely affected.
- Our rights to develop and commercialize technology and product candidates are subject, in part, to the terms and conditions of licenses granted to us by others.
- The intellectual property landscape around genome editing technology, including base editing, is highly dynamic, and third parties may initiate legal proceedings alleging that we are infringing, misappropriating, or otherwise violating their intellectual property rights, the outcome of which would be uncertain and may prevent, delay or otherwise interfere with our product discovery and development efforts.
- Our owned and in-licensed patents and other intellectual property may be subject to priority disputes or inventorship disputes or we may be subject to claims that we have infringed, misappropriated or otherwise violated the intellectual property of a third party and similar proceedings. If we or our licensors are unsuccessful in any of these proceedings, we may be required to obtain licenses from third parties, which may not be available on commercially reasonable terms or at all, or to cease the development, manufacture, and commercialization of one or more of the product candidates we may develop, which could have a material adverse impact on our business.

The foregoing is only a summary of some of our risks. For a more detailed discussion of these and other risks you should consider before making an investment in our common stock, see "Risk Factors."

Implications of being an emerging growth company

We qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. As an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies, including reduced disclosure about our executive compensation arrangements, exemption from the requirements to hold non-binding advisory votes on executive compensation and golden parachute payments and exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting.

We may take advantage of these exemptions until the last day of the fiscal year following the fifth anniversary of this offering or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company earlier if we have more than $1.07 billion in annual revenue, we have more than $700.0 million in market value of our stock held by non-affiliates (and we have been a public company for at least 12 months and have filed one annual report on Form 10-K) or we issue more than $1.0 billion of non-convertible debt securities over a three-year period. For so long as we remain an emerging growth company, we are permitted, and intend, to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. We may choose to take advantage of some, but not all, of the available exemptions.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected not to "opt out" of such extended transition period, which means that when a standard is issued or revised and it has different application dates for public or private companies, we will adopt the new or revised standard at the time private companies adopt the new or revised standard and will do so until such time that we either (i) irrevocably elect to "opt out" of such extended transition period or (ii) no longer qualify as an emerging growth company. Therefore, the reported results of operations contained in our consolidated financial statements may not be directly comparable to those of other public companies.

Our corporate information

We were incorporated in Delaware in January 2017. Our principal executive offices are located at 26 Landsdowne Street, 2nd Floor, Cambridge, MA 02139, and our telephone number is 857-327-8775. Our website is www.beamtx.com. Information contained on, or that can be accessed through, our website is not part of this prospectus.

The offering

Common stock offered by us	shares.
Common stock to be outstanding after this offering	shares (shares if the underwriters exercise their option to purchase additional shares in full).
Underwriters' option to purchase additional shares of common stock from us	We have granted the underwriters an option to purchase up to an aggregate of additional shares of common stock from us at the initial public offering price, less the estimated underwriting discounts and commissions, for a period of 30 days after the date of this prospectus.
Use of proceeds	We estimate that our net proceeds from the sale of our common stock in this offering will be approximately $ million, assuming an initial public offering price of $ per share, which is the midpoint of the range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We intend to use the net proceeds from this offering for continued research and development of our portfolio of base editing programs, including preclinical studies and IND-enabling studies and advancement through potential preclinical proof-of-concept of our three delivery modalities, IND-enabling studies and the potential initiation of clinical studies for certain of our current programs, continued advancement of our platform technology and discovery-stage research for other potential programs, and general corporate purposes. See "Use of Proceeds."
Dividend policy	We do not anticipate declaring or paying any cash dividends on our capital stock in the foreseeable future. See "Dividend Policy."
Risk factors	You should carefully read the "Risk Factors" section of this prospectus and the other information included in this prospectus for a discussion of factors that you should consider before deciding to invest in our common stock.
Proposed Nasdaq Global Market symbol	BEAM

The share amounts listed here are based on shares outstanding as of December 31, 2018. These amounts exclude:

- 11,144,996 shares of common stock issuable upon the exercise of stock options outstanding as of December 31, 2018 under our 2017 Stock Option and Grant Plan, or the 2017 Plan, at a weighted average exercise price of $0.19 per share;

- 3,523,383 shares of common stock available for future issuance as of December 31, 2018 under our 2017 Plan; and
- shares of common stock reserved for issuance under our 2019 Equity Incentive Plan, or the 2019 Plan, which will become effective in connection with this offering.

Unless otherwise noted, the information in this prospectus assumes:

- a 1-for- reverse stock split effected on , 2019;
- the automatic conversion of all outstanding shares of our redeemable convertible preferred stock into an aggregate of 119,308,387 shares of common stock immediately prior to the closing of this offering;
- no exercise of the outstanding stock options described above;
- no issuance of warrants on or after December 31, 2018;
- no exercise by the underwriters of their option to purchase additional shares; and
- the filing and effectiveness of our restated articles of organization and the adoption of our amended and restated bylaws upon the closing of this offering.

Summary consolidated financial data

You should read the following summary consolidated financial data together with the sections titled “Selected Consolidated Financial Data” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and the related notes included elsewhere in this prospectus. The consolidated statement of operations data for the year ended December 31, 2018 and the period from January 25, 2017 (Inception) through December 31, 2017 have been derived from our audited consolidated financial statements included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that may be expected in the future.

	Year ended December 31, 2018	Period from January 25, 2017 (Inception) through December 31, 2017
	(in thousands, except share and per share data)	
Consolidated Statement of Operations and Other Comprehensive Loss Data:		
Operating expenses:		
Research and development	$ 33,873	$ 5,859
General and administrative	11,868	2,021
Total operating expenses	45,741	7,880
Loss from operations	(45,741)	(7,880)
Other income (expense):		
Loss on issuance of preferred stock in connection with Blink Merger(1)	(49,500)	—
Loss on issuance of preferred stock to investors	(5,715)	—
Change in fair value of derivative liabilities	(11,749)	(500)
Change in fair value of preferred stock tranche liabilities	(4,325)	404
Other expense	—	(26)
Interest income	292	—
Total other income (expense)	(70,997)	(122)
Net loss and other comprehensive loss	$ (116,738)	$ (8,002)
Net loss per common share attributable to common stockholders, basic and diluted(2)	$ (9.04)	$ (8.36)
Weighted-average common shares used in net loss per share attributable to common stockholders, basic and diluted	12,977,480	1,159,283

	As of December 31, 2018			
	Actual	Pro forma(4)	Pro forma, as adjusted	(5)(6)
			(in thousands)	
Balance Sheet Data:				
Cash and cash equivalents	$ 146,443	$ 146,443	$	
Working capital(3)	122,688	122,688		
Total assets	167,012	167,012		
Redeemable convertible preferred stock	251,434	—		
Total stockholders’ (deficit) equity	(117,406)	134,028		

(1) See Note 8 to our consolidated financial statements included elsewhere in this prospectus for a description of the Blink Merger.

(2) See Note 12 to our consolidated financial statements included elsewhere in this prospectus for a description of the method used to calculated basic and diluted net loss per share.

(3) We define working capital as current assets less current liabilities.

(4) Pro forma to reflect the automatic conversion of all outstanding shares of our preferred stock into shares of common stock immediately prior to the closing of this offering.

(5) The pro forma as adjusted balance sheet data reflects the pro forma adjustments described in (2) above and to give further effect to our issuance and sale of shares of our common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(6) The pro forma as adjusted information discussed above is illustrative only and will change based on the actual initial public offering price and other terms of this offering determined at pricing. A $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets and total stockholders' deficit by $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. An increase (decrease) of 1,000,000 shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets and total stockholders' equity by $ million, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

Risk factors

Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below together with all of the other information contained in this prospectus, including our consolidated financial statements and related notes appearing at the end of this prospectus, before deciding to invest in our common stock. If any of the events or developments described below were to occur, our business, prospects, operating results and financial condition could suffer materially, the trading price of our common stock could decline and you could lose all or part of your investment. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may also adversely affect our business.

Risks related to our financial position and need for additional capital

We have incurred significant losses since inception. We expect to incur losses for the foreseeable future and may never achieve or maintain profitability.

Since inception, we have incurred significant operating losses. Our net loss was $8.0 million for the period from January 25, 2017 (date of inception) to December 31, 2017 and $116.7 million for the year ended December 31, 2018. As of December 31, 2018, we had an accumulated deficit of $124.7 million. We have financed our operations primarily through private placements of our preferred stock. We have devoted all of our efforts to research and development. We expect to continue to incur significant expenses and increasing operating losses for the foreseeable future. The net losses we incur may fluctuate significantly from quarter to quarter. We anticipate that our expenses will increase substantially if and as we:

- continue our current research programs and our preclinical development of product candidates from our current research programs;
- seek to identify additional research programs and additional product candidates;
- initiate preclinical testing and clinical trials for any product candidates we identify and develop;
- maintain, expand, enforce, defend and protect our intellectual property portfolio and provide reimbursement of third-party expenses related to our patent portfolio;
- seek marketing approvals for any of our product candidates that successfully complete clinical trials;
- ultimately establish a sales, marketing, and distribution infrastructure to commercialize any medicines for which we may obtain marketing approval;
- further develop our base editing platform;
- hire additional research and development personnel;
- hire clinical and commercial personnel;
- add operational, financial, and management information systems and personnel, including personnel to support our product development;
- acquire or in-license product candidates, intellectual property and technologies;
- should we decided to do so, build and maintain a commercial-scale current Good Manufacturing Practices, or cGMP, manufacturing facility; and
- operate as a public company.

We have not initiated clinical development of any product candidate and expect that it will be many years, if ever, before we have a product candidate ready for commercialization. To become and remain profitable, we must develop and, either directly or through collaborators, eventually commercialize a medicine or medicines with significant market potential. This will require us to be successful in a range of challenging activities, including identifying product candidates, completing preclinical testing and clinical trials of product candidates, obtaining marketing approval for these product candidates, manufacturing, marketing, and selling those medicines for which we may obtain marketing approval, and satisfying any post-marketing requirements. We may never succeed in these activities and, even if we do, may never generate revenues that are significant or large enough to achieve profitability. We are currently only in the preclinical testing stages for all our research programs. Because of the numerous risks and uncertainties associated with developing base editing product candidates, we are unable to predict the extent of any future losses or when we will become profitable, if at all. If we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the value of our company and could impair our ability to raise capital, maintain our research and development efforts, expand our business, or continue our operations. A decline in the value of our company could also cause you to lose all or part of your investment.

We will need substantial additional funding. If we are unable to raise capital when needed, we would be forced to delay, reduce, or eliminate our research and product development programs or future commercialization efforts.

We expect our expenses to increase in connection with our ongoing activities, particularly as we identify, continue the research and development of, initiate clinical trials of, and seek marketing approval for, product candidates. In addition, if we obtain marketing approval for any product candidates we may develop, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing, and distribution to the extent that such sales, marketing, manufacturing, and distribution are not the responsibility of a collaborator. Furthermore, upon the closing of this offering, we expect to incur additional costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce, or eliminate our research and product development programs or future commercialization efforts.

As of December 31, 2018, our cash and cash equivalents were $146.4 million. We estimate that the net proceeds of this offering will be approximately $ million, assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover of this prospectus, after deducting estimated underwriting discounts and commissions and offering expenses payable by us. We expect that the net proceeds from this offering, together with our existing cash and cash equivalents, will enable us to fund our operating expenses and capital expenditure requirements for at least the next months. However, our operating plan may change as a result of factors currently unknown to us, and we may need to seek funding sooner than planned. Our future capital requirements will depend on many factors, including:

- the costs of continuing to build our base editing platform;
- the costs of acquiring licenses for the delivery modalities that will be used with our product candidates we may develop;
- the scope, progress, results, and costs of discovery, preclinical development, formulation development, and clinical trials for the product candidates we may develop;
- the costs of preparing, filing, and prosecuting patent applications, maintaining and enforcing our intellectual property and proprietary rights, and defending intellectual property-related claims;

- the costs, timing, and outcome of regulatory review of the product candidates we may develop;
- the costs of future activities, including product sales, medical affairs, marketing, manufacturing, distribution, coverage and reimbursement for any product candidates we may develop for which we receive regulatory approval;
- our ability to establish and maintain additional collaborations on favorable terms, if at all;
- the success of any collaborations that we may establish and of our license agreements;
- the achievement of milestones or occurrence of other developments that trigger payments under any additional collaboration agreements we obtain;
- the extent to which we acquire or in-license product candidates, intellectual property and technologies; and
- the costs of operating as a public company.

Identifying potential product candidates and conducting preclinical testing and clinical trials is a time-consuming, expensive, and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain marketing approval and achieve product sales. In addition, even if we successfully identify and develop product candidates and those are approved, we may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of medicines that we do not expect to be commercially available for many years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all.

Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our product candidates. We cannot be certain that additional funding will be available on acceptable terms, or at all. We have no committed source of additional capital and, if we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we may have to significantly delay, scale back or discontinue the development or commercialization of our product candidates or other research and development initiatives. Our license agreements and any future collaboration agreements may also be terminated if we are unable to meet the payment or other obligations under the agreements. We could be required to seek collaborators for product candidates we may develop at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available or relinquish or license on unfavorable terms our rights to product candidates we may develop in markets where we otherwise would seek to pursue development or commercialization ourselves.

If we are unable to obtain funding on a timely basis, we may be required to significantly curtail, delay or discontinue one or more of our research or development programs or the commercialization of any product candidate, or be unable to expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially affect our business, financial condition and results of operations. Any of the above events could significantly harm our business, prospects, financial condition and results of operations and cause the price of our common stock to decline.

Raising additional capital may cause dilution to our stockholders, including purchasers of common stock in this offering, restrict our operations or require us to relinquish rights to our technologies or product candidates we may develop.

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances, and licensing arrangements. We do not have any committed external source of funds. To the extent that we raise additional

capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, declaring dividends, and possibly other restrictions.

If we raise funds through additional collaborations, strategic alliances, or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs, or product candidates we may develop, or we may have to grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce, or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Our short operating history may make it difficult for you to evaluate the success of our business to date and to assess our future viability.

We are an early-stage company. We were founded and commenced operations in January 2017. Our operations to date have been limited to organizing and staffing our company, business planning, raising capital, acquiring and developing our platform and technology, identifying potential product candidates, and undertaking preclinical studies. All of our research programs are still in the preclinical or research stage of development, and their risk of failure is high. We have not yet demonstrated an ability to initiate or successfully complete any clinical trials, including large-scale, pivotal clinical trials, obtain marketing approvals, manufacture a commercial-scale medicine, or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful commercialization. Typically, it takes about 10 to 15 years to develop a new medicine from the time it is discovered to when it is available for treating patients. Consequently, any predictions you make about our future success or viability may not be as accurate as they could be if we had a longer operating history.

Our limited operating history, particularly in light of the rapidly evolving base editing and gene editing field, may make it difficult to evaluate our technology and industry and predict our future performance. Our very short history as an operating company makes any assessment of our future success or viability subject to significant uncertainty. We will encounter risks and difficulties frequently experienced by very early stage companies in rapidly evolving fields. If we do not address these risks successfully, our business will suffer.

In addition, as a new business, we may encounter other unforeseen expenses, difficulties, complications, delays, and other known and unknown factors. We will need to transition from a company with a research focus to a company capable of supporting commercial activities. We may not be successful in such a transition.

We have never generated revenue from product sales and may never become profitable.

Our ability to generate revenue from product sales and achieve profitability depends on our ability, alone or with collaborative partners, to successfully complete the development of, and obtain the regulatory approvals necessary to commercialize, product candidates we may identify for development. We do not anticipate generating revenues from product sales for the next several years, if ever. Our ability to generate future revenues from product sales depends heavily on our, or our collaborators', ability to successfully:

- identify product candidates and complete research and preclinical and clinical development of any product candidates we may identify;
- seek and obtain regulatory and marketing approvals for any of our product candidates for which we complete clinical trials;

- launch and commercialize any of our product candidates for which we obtain regulatory and marketing approval by establishing a sales force, marketing, and distribution infrastructure or, alternatively, collaborating with a commercialization partner;
- qualify for adequate coverage and reimbursement by government and third-party payors for any of our product candidates for which we obtain regulatory and marketing approval;
- develop, maintain, and enhance a sustainable, scalable, reproducible, and transferable manufacturing process for the product candidates we may develop;
- establish and maintain supply and manufacturing relationships with third parties that can provide adequate, in both amount and quality, products, and services to support clinical development and the market demand for any of our product candidates for which we obtain regulatory and marketing approval;
- obtain market acceptance of any product candidates we may develop as viable treatment options;
- address competing technological and market developments;
- implement internal systems and infrastructure, as needed;
- negotiate favorable terms in any collaboration, licensing, or other arrangements into which we may enter and performing our obligations in such collaborations;
- maintain, protect, enforce, defend, and expand our portfolio of intellectual property rights, including patents, trade secrets, and know-how;
- avoid and defend against third-party interference, infringement, and other intellectual property claims; and
- attract, hire, and retain qualified personnel.

Even if one or more of the product candidates we may develop are approved for commercial sale, we anticipate incurring significant costs associated with commercializing any approved product candidate. Our expenses could increase beyond expectations if we are required by the U.S. Food and Drug Administration, or the FDA, the European Medicines Agency, or the EMA, or other regulatory authorities to perform clinical and other studies in addition to those that we currently anticipate. Even if we are able to generate revenues from the sale of any approved product candidates, we may not become profitable and may need to obtain additional funding to continue operations.

Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the value of our company and could impair our ability to raise capital, maintain our research and development efforts, expand our business or continue our operations. A decline in the value of our company also could cause you to lose all or part of your investment.

Our future ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

We have incurred substantial losses during our history and we may never achieve profitability. To the extent that we continue to generate taxable losses, unused losses will carry forward to offset a portion of future taxable income, if any, subject to expiration of such carryforwards in the case of carryforwards generated prior to 2018. Additionally, we continue to generate business tax credits, including research and development tax credits, which generally may be carried forward to offset a portion of future taxable income, if any, subject to expiration of such credit carryforwards. In addition, under Sections 382 and 383 of the Internal Revenue Code

of 1986, as amended, or the Code, if a corporation undergoes an “ownership change,” generally defined as a greater than 50 percentage point change (by value) in its equity ownership over a three-year period, the corporation’s ability to use its pre-change net operating loss carryforwards, or NOLs, and other pre-change tax attributes (such as research and development tax credits) to offset its post-change income or taxes may be limited. Our prior equity offerings and other changes in our stock ownership may have resulted in such ownership changes. In addition, we may experience ownership changes in the future as a result of this offering or subsequent shifts in our stock ownership, some of which are outside of our control. As a result, if we earn net taxable income, our ability to use our pre-change NOLs or other pre-change tax attributes to offset U.S. federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us. Additional limitations on our ability to utilize our NOLs to offset future taxable income may arise as a result of our corporate structure whereby NOLs generated by certain of our subsidiaries or controlled entities may not be available to offset taxable income earned by our subsidiaries or other controlled entities. In addition, under legislation commonly referred to as the Tax Cuts and Jobs Act of 2017, or the Tax Act, the amount of post-2017 NOLs that we are permitted to deduct in any taxable year is limited to 80% of our taxable income in such year. The Tax Act generally eliminates the ability to carry back any NOLs to prior taxable years, while allowing post-2017 unused NOLs to be carried forward indefinitely. There is a risk that due to changes under the Tax Act, regulatory changes, or other unforeseen reasons, our existing NOLs or business tax credits could expire or otherwise be unavailable to offset future income tax liabilities. At the state level, there may also be periods during which the use of NOLs or business tax credits is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. For these reasons, we may not be able to realize a tax benefit from the use of our NOLs or tax credits, even if we attain profitability.

Comprehensive tax reform legislation could adversely affect our business and financial condition.

On December 22, 2017, the Tax Act was signed into law. The Tax Act, among other things, contains significant changes to corporate taxation, including (i) reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%, (ii) limitation of the tax deduction for interest expense to 30% of adjusted earnings (except for certain small businesses), (iii) limitation of the deduction for NOLs to 80% of current year taxable income in respect of NOLs generated during or after 2018 and elimination of NOL carrybacks, (iv) immediate deductions for certain new investments instead of deductions for depreciation expense over time, and (v) modifying or repealing many business deductions and credits. Any federal NOL incurred in 2018 and in future years may now be carried forward indefinitely pursuant to the Tax Act. It is uncertain if and to what extent various states will conform to the newly enacted federal tax law. We will continue to examine the impact the Tax Act may have on our business.

Risks related to discovery, development, and commercialization

Base editing is a novel technology that is not yet clinically validated for human therapeutic use. The approaches we are taking to discover and develop novel therapeutics are unproven and may never lead to marketable products.

We are focused on developing potentially curative medicines utilizing base editing technology. Although there have been significant advances in the field of gene therapy, which typically involves introducing a copy of a gene into a patient’s cell, and gene editing in recent years, base editing technologies are new and largely unproven. The technologies that we have licensed and that we intend to develop and intend to license have not yet been clinically tested, nor are we aware of any clinical trials for safety or efficacy having been completed by third parties using our base editing or similar technologies. The scientific evidence to support the feasibility of developing product candidates based on these technologies is both preliminary and limited, and base editing and delivery modalities for it are novel. Successful development of product candidates by us will require

solving a number of issues, including safely delivering a therapeutic into target cells within the human body or in an *ex vivo* setting, optimizing the efficiency and specificity of such product candidates, and ensuring the therapeutic selectivity of such product candidates. There can be no assurance we will be successful in solving any or all of these issues.

We have concentrated our research efforts to date on preclinical work to bring therapeutics to the clinic for our initial indications, and our future success is highly dependent on the successful development of base editing technologies, cellular delivery methods and therapeutic applications of that technology. While some of the existing gene editing technologies have progressed to clinical trials, they continue to suffer from various limitations, and such limitations may affect our future success. We may decide to alter or abandon our initial programs as new data become available and we gain experience in developing base editing therapeutics. We cannot be sure that our technologies will yield satisfactory products that are safe and effective, scalable or profitable in our initial indications or any other indication we pursue.

Development activities in the field of base editing are currently subject to a number of risks related to the ownership and use of certain intellectual property rights that are subject to patent interference proceedings in the United States and opposition proceedings in Europe. For additional information regarding the risks that may apply to our and our licensors' intellectual property rights, see the section entitled "—Risks Related to Our Intellectual Property" appearing elsewhere in this prospectus for more information.

We may not be successful in our efforts to identify and develop potential product candidates. If these efforts are unsuccessful, we may never become a commercial stage company or generate any revenues.

The success of our business depends primarily upon our ability to identify, develop, and commercialize product candidates based on our gene editing platform. All of our product development programs are still in the research or preclinical stage of development. Our research programs may fail to identify potential product candidates for clinical development for a number of reasons. Our research methodology may be unsuccessful in identifying potential product candidates, our potential product candidates may be shown to have harmful side effects in preclinical *in vitro* experiments or animal model studies, they may not show promising signals of therapeutic effect in such experiments or studies or they may have other characteristics that may make the product candidates impractical to manufacture, unmarketable, or unlikely to receive marketing approval.

In addition, although we believe base editing will position us to rapidly expand our portfolio of product candidates beyond our current product candidates we may develop after only minimal changes to the product candidate construct, we have not yet successfully developed any product candidate and our ability to expand our portfolio may never materialize.

If any of these events occur, we may be forced to abandon our research or development efforts for a program or programs, which would have a material adverse effect on our business, financial condition, results of operations, and prospects. Research programs to identify new product candidates require substantial technical, financial, and human resources. We may focus our efforts and resources on potential programs or product candidates that ultimately prove to be unsuccessful, which would be costly and time-consuming.

The gene editing field is relatively new and is evolving rapidly. We are focusing our research and development efforts on gene editing using base editing technology, but other gene editing technologies may be discovered that provide significant advantages over base editing, which could materially harm our business.

To date, we have focused our efforts on gene editing technologies using base editing. Other companies have previously undertaken research and development of gene editing technologies using zinc finger nucleases, engineered meganucleases, and transcription activator-like effector nucleases, or TALENs, but to date none has obtained marketing approval for a product candidate. There can be no certainty that base editing technology

will lead to the development of genetic medicines or that other gene editing technologies will not be considered better or more attractive for the development of medicines. For example, Feng Zhang's group at the Massachusetts Institute of Technology and The Broad Institute and, separately, Samuel Sternberg's group at Columbia University recently announced the discovery of the use of transposons, or "jumping genes." Transposons can insert themselves into different places in the genome and can be programmed to carry specific DNA sequences to specific sites, without the need for making double-stranded breaks in DNA. Similarly, another new gene editing technology that has not been discovered yet may be determined to be more attractive than base editing. Moreover, if we decide to develop gene editing technologies other than those involving base editing, we cannot be certain we will be able to obtain rights to such technologies. Although all of our founders who currently provide consulting and advisory services to us in the area of base editing technologies have assignment of inventions obligations to us with respect to the services they perform for us, these assignment of inventions obligations are subject to limitations and do not extend to their work in other fields or to the intellectual property arising from their employment with their respective academic and research institutions. To obtain intellectual property rights assigned by these founders to such institutions, we would need to enter into license agreements with such institutions. Any of these factors could reduce or eliminate our commercial opportunity, and could have a material adverse effect on our business, financial condition, results of operations, and prospects.

We are very early in our development efforts. All of our product candidates are still in preclinical development or earlier stages and it will be many years before we or our collaborators commercialize a product candidate, if ever. If we are unable to advance our product candidates to clinical development, obtain regulatory approval and ultimately commercialize our product candidates, or experience significant delays in doing so, our business will be materially harmed.

We are very early in our development efforts and have focused our research and development efforts to date on base editing technology, identifying our initial targeted disease indications and our initial product candidates. We have not yet achieved preclinical proof of concept *in vivo* and there is no guarantee that we will achieve it. Our future success depends heavily on the successful development of our base editing product candidates. Currently, all of our product candidates are in preclinical development or in discovery. We have invested substantially all of our efforts and financial resources in building our base editing platform, and the identification and preclinical development of our current product candidates. Our ability to generate product revenue, which we do not expect will occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of our product candidates, which may never occur. We currently generate no revenue from sales of any product and we may never be able to develop or commercialize a marketable product.

Commencing clinical trials in the United States is also subject to acceptance by the FDA of our Investigational New Drug application, or IND, and finalizing the trial design based on discussions with the FDA and other regulatory authorities. In the event that the FDA requires us to complete additional preclinical studies or we are required to satisfy other FDA requests, the start of our first clinical trials may be delayed. Even after we receive and incorporate guidance from these regulatory authorities, the FDA or other regulatory authorities could disagree that we have satisfied their requirements to commence our clinical trial or change their position on the acceptability of our trial design or the clinical endpoints selected, which may require us to complete additional preclinical studies or clinical trials or impose stricter approval conditions than we currently expect. There are equivalent processes and risks applicable to clinical trial applications in other countries, including in Europe.

Commercialization of our product candidates we may develop will require additional preclinical and clinical development; regulatory and marketing approval in multiple jurisdictions, including by the FDA and the EMA; obtaining manufacturing supply, capacity and expertise; building of a commercial organization; and significant

marketing efforts. The success of product candidates we may identify and develop will depend on many factors, including the following:

- sufficiency of our financial and other resources to complete the necessary preclinical studies, IND-enabling studies, and clinical trials;
- successful enrollment in, and completion of, clinical trials;
- receipt of marketing approvals from applicable regulatory authorities;
- establishment of arrangements with third-party manufacturers for clinical supply and commercial manufacturing and, where applicable, commercial manufacturing capabilities;
- successful development of our internal manufacturing processes and transfer to larger-scale facilities operated by either a contract manufacturing organization, or CMO, or by us;
- obtaining and maintaining patent, trade secret, and other intellectual property protection and non-patent exclusivity for our medicines;
- launching commercial sales of the medicines, if and when approved, whether alone or in collaboration with others;
- acceptance of the products, if and when approved, by patients, the medical community, and third-party payors;
- effectively competing with other therapies and treatment options;
- a continued acceptable safety profile of the medicines following approval;
- enforcing and defending intellectual property and proprietary rights and claims; and
- supplying the product at a price that is acceptable to the pricing or reimbursement authorities in different countries.

If we do not successfully achieve one or more of these activities in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize any product candidates we may develop, which would materially harm our business. If we do not receive regulatory approvals for our product candidates, we may not be able to continue our operations.

If any of the product candidates we may develop, or the delivery modes we rely on to administer them, cause serious adverse events, undesirable side effects, or unexpected characteristics, such events, side effects or characteristics could delay or prevent regulatory approval of the product candidates, limit the commercial potential, or result in significant negative consequences following any potential marketing approval.

We have not evaluated any product candidates in human clinical trials. Moreover, there have been only a limited number of clinical trials involving the use of gene editing technologies and none involving base editing technology similar to our technology. It is impossible to predict when or if any product candidates we may develop will prove safe in humans. In the genetic medicine field, there have been several significant adverse events from gene therapy treatments in the past, including reported cases of leukemia and death. There can be no assurance that base editing technologies will not cause undesirable side effects, as improper editing of a patient's DNA could lead to lymphoma, leukemia, or other cancers, or other aberrantly functioning cells.

A significant risk in any base editing product candidate is that "off-target" edits may occur, which could cause serious adverse events, undesirable side effects or unexpected characteristics. For example, Erwei Zuo et al.

reported that cytosine base editors generated substantial off-target edits, that is, edits in unintended locations on the DNA, when tested in mouse embryos. Such unintended edits are referred to as “spurious deamination.” We cannot be certain that off-target editing will not occur in any of our planned or future clinical studies, and the lack of observed side effects in preclinical studies does not guarantee that such side effects will not occur in human clinical studies. There is also the potential risk of delayed adverse events following exposure to base editing therapy due to the permanence of edits to DNA or due to other components of product candidates used to carry the genetic material. Further, because base editing makes a permanent change, the therapy cannot be withdrawn, even after a side effect is observed. In addition, Rees et al. and Grunewald et al. have reported that the deaminases we currently use in our C base editors and our A base editors for use in DNA base editing also cause unintended mutations in RNA for as long as the editor is present in the cell.

Although we and others have demonstrated the ability to engineer base editors to improve the specificity of their edits in a laboratory setting, we cannot be sure that our engineering efforts will be effective in any product candidates that we may develop. For example, we might not be able to engineer an editor to make the desired change or a by-stander edit could diminish the effectiveness of an edit that we make.

In certain of our programs, we plan to use lipid nanoparticles, or LNPs to deliver our base editors. LNPs have been shown to induce oxidative stress in the liver at certain doses, as well as initiate systemic inflammatory responses that can be fatal in some cases. While we aim to continue to optimize our LNPs, there can be no assurance that our LNPs will not have undesired effects. Our LNPs could contribute, in whole or in part, to one or more of the following: immune reactions, infusion reactions, complement reactions, opsonation reactions, antibody reactions including IgA, IgM, IgE or IgG or some combination thereof, or reactions to the PEG from some lipids or PEG otherwise associated with the LNP. Certain aspects of our investigational medicines may induce immune reactions from either the mRNA or the lipid as well as adverse reactions within liver pathways or degradation of the mRNA or the LNP, any of which could lead to significant adverse events in one or more of our future clinical trials. Many of these types of side effects have been seen for legacy LNPs. There may be uncertainty as to the underlying cause of any such adverse event, which would make it difficult to accurately predict side effects in future clinical trials and would result in significant delays in our programs.

Our viral vectors including AAV or lentiviruses, which are relatively new approaches used for disease treatment, also have known side effects, and for which additional risks could develop in the future. In past clinical trials that were conducted by others with non-AAV vectors, several significant side effects were caused by gene therapy treatments, including reported cases of leukemia and death. Other potential side effects could include an immunologic reaction and insertional oncogenesis, which is the process whereby the insertion of a functional gene near a gene that is important in cell growth or division results in uncontrolled cell division, which could potentially enhance the risk of malignant transformation. If the vectors we use demonstrate a similar side effect, or other adverse events, we may be required to halt or delay further clinical development of any potential product candidates. Furthermore, the FDA has stated that lentiviral vectors possess characteristics that may pose high risks of delayed adverse events. Such delayed adverse events may occur in other viral vectors, including AAV vectors, at a lower rate.

In addition to side effects and adverse events caused by our product candidates, the conditioning, administration process or related procedures which may be used in our electroporation pipeline also can cause adverse side effects and adverse events. A gene therapy patient is generally administered cytotoxic drugs to remove stem cells from the bone marrow to create sufficient space in the bone marrow for the modified stem cells to engraft and produce new cells. This procedure compromises the patient’s immune system. If in the future we are unable to demonstrate that such adverse events were caused by the conditioning regimens used, or administration process or related procedure, the FDA, the European Commission, EMA or other regulatory authorities could order us to cease further development of, or deny approval of, our product candidates for any or all target indications. Even if we are able to demonstrate that adverse events are not related to the drug

product or the administration of such drug product, such occurrences could affect patient recruitment, the ability of enrolled patients to complete the clinical trial, or the commercial viability of any product candidates that obtain regulatory approval.

If any product candidates we develop are associated with serious adverse events, undesirable side effects, or unexpected characteristics, we may need to abandon their development or limit development to certain uses or subpopulations in which the serious adverse events, undesirable side effects or other characteristics are less prevalent, less severe, or more acceptable from a risk-benefit perspective, any of which would have a material adverse effect on our business, financial condition, results of operations, and prospects. Many product candidates that initially showed promise in early stage testing for treating cancer or other diseases have later been found to cause side effects that prevented further clinical development of the product candidates.

If in the future we are unable to demonstrate that any of the above adverse events were caused by factors other than our product candidate, the FDA, the EMA or other regulatory authorities could order us to cease further development of, or deny approval of, any product candidates we are able to develop for any or all targeted indications. Even if we are able to demonstrate that all future serious adverse events are not product-related, such occurrences could affect patient recruitment or the ability of enrolled patients to complete the trial. Moreover, if we elect, or are required, to delay, suspend or terminate any clinical trial of any product candidate we may develop, the commercial prospects of such product candidates may be harmed and our ability to generate product revenues from any of these product candidates may be delayed or eliminated. Any of these occurrences may harm our ability to identify and develop product candidates, and may harm our business, financial condition, result of operations, and prospects significantly.

Additionally, if we successfully develop a product candidate and it receives marketing approval, the FDA could require us to adopt a Risk Evaluation and Mitigation Strategy, or REMS, to ensure that the benefits of treatment with such product candidate outweighs the risks for each potential patient, which may include, among other things, a medication guide outlining the risks of the product for distribution to patients, a communication plan to health care practitioners, extensive patient monitoring, or distribution systems and processes that are highly controlled, restrictive, and more costly than what is typical for the industry. Furthermore, if we or others later identify undesirable side effects caused by any product candidate that we develop, several potentially significant negative consequences could result, including:

- regulatory authorities may suspend or withdraw approvals of such product candidate;
- regulatory authorities may require additional warnings on the label or limit the approved use of such product candidate;
- we may be required to conduct additional clinical trials;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of any product candidates we may identify and develop and could have a material adverse effect on our business, financial condition, results of operations, and prospectus.

We have not tested any of our proposed delivery modalities and product candidates in clinical trials and any favorable preclinical results are not predictive of results that may be observed in clinical trials.

We have not tested any of our proposed delivery modalities in clinical trials. For example, we intend to use novel split intein technology for AAV gene therapy that allows us to deliver the base editor and guide RNA

construct by co-infection with two viruses, where each virus contains one half of the editor. The scientific evidence to support the feasibility of developing product candidates based on this technology is both preliminary and limited. We also intend to use LNPs to deliver some of our base editors. While LNPs have been used to deliver smaller molecules, such as RNAi, they have not been clinically proven to deliver larger RNA molecules, such as the ones we intend to use for our base editors. Furthermore, as with many AAV-mediated gene therapy approaches, certain patients' immune systems might prohibit the successful delivery, thereby potentially limiting treatment outcomes of these patients. Even if initial clinical trials in any of our product candidates we may develop are successful, these product candidates we may develop may fail to show the desired safety and efficacy in later stages of clinical development despite having successfully advanced through preclinical studies and initial clinical trials.

There is a high failure rate for drugs and biologics proceeding through clinical trials. A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in later stage clinical trials even after achieving promising results in earlier stage clinical trials. Data obtained from preclinical and clinical activities are subject to varying interpretations, which may delay, limit, or prevent regulatory approval. In addition, regulatory delays or rejections may be encountered as a result of many factors, including changes in regulatory policy during the period of product development.

Any such adverse events may cause us to delay, limit, or terminate planned clinical trials, any of which would have a material adverse effect on our business, financial condition, results of operations, and prospects.

In addition, the results of preclinical studies may not be predictive of the results of later-stage preclinical studies or clinical trials. To date, we have not generated preclinical or clinical trial results. If we generate preclinical results, such results will not ensure that later preclinical studies or clinical trials will demonstrate similar results. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their product candidates.

We may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we focus on research programs and product candidates that we identify for specific indications among many potential options. As a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable medicines. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing, or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate. Any such event could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Even if we complete the necessary clinical trials, we cannot predict when, or if, we will obtain regulatory approval to commercialize a product candidate we may develop in the United States or any other jurisdiction, and any such approval may be for a more narrow indication than we seek.

We cannot commercialize a product candidate until the appropriate regulatory authorities have reviewed and approved the product candidate. Even if any product candidates we may develop meet their safety and efficacy

endpoints in clinical trials, the regulatory authorities may not complete their review processes in a timely manner, or we may not be able to obtain regulatory approval. Additional delays may result if an FDA Advisory Committee or other regulatory authority recommends non-approval or restrictions on approval. In addition, we may experience delays or rejections based upon additional government regulation from future legislation or administrative action, or changes in regulatory authority policy during the period of product development, clinical trials, and the review process.

Regulatory authorities also may approve a product candidate for more limited indications than requested or they may impose significant limitations in the form of narrow indications, warnings or a REMS. These regulatory authorities may require labeling that includes precautions or contra-indications with respect to conditions of use, or they may grant approval subject to the performance of costly post-marketing clinical trials. In addition, regulatory authorities may not approve the labeling claims that are necessary or desirable for the successful commercialization of any product candidates we may develop. Any of the foregoing scenarios could materially harm the commercial prospects for any product candidates we may develop and materially adversely affect our business, financial condition, results of operations, and prospects.

Marketing approval by the FDA in the United States, if obtained, does not ensure approval by regulatory authorities in other countries or jurisdictions. In addition, clinical trials conducted in one country may not be accepted by regulatory authorities in other countries, and regulatory approval in one country does not guarantee regulatory approval in any other country. Approval processes vary among countries and can involve additional product candidate testing and validation and additional administrative review periods. Seeking foreign regulatory approval could result in difficulties and costs for us and require additional preclinical studies or clinical trials which could be costly and time-consuming. Regulatory requirements can vary widely from country to country and could delay or prevent the introduction of our product candidates we may develop in those countries. The foreign regulatory approval process involves all of the risks associated with FDA approval. We do not have any product candidates approved for sale in any jurisdiction, including international markets, and we do not have experience in obtaining regulatory approval in international markets. If we fail to comply with regulatory requirements in international markets or to obtain and maintain required approvals, or if regulatory approvals in international markets are delayed, our target market will be reduced and our ability to realize the full market potential of our product candidates will be unrealized.

Even if any product candidates we may develop receive marketing approval, they may fail to achieve the degree of market acceptance by physicians, patients, healthcare payors, and others in the medical community necessary for commercial success.

The commercial success of any of our product candidates we may develop will depend upon its degree of market acceptance by physicians, patients, third-party payors, and others in the medical community. Ethical, social, and legal concerns about genetic medicines generally and base editing technologies specifically could result in additional regulations restricting or prohibiting the marketing of our product candidates we may develop. Even if any product candidates we may develop receive marketing approval, they may nonetheless fail to gain sufficient market acceptance by physicians, patients, healthcare payors, and others in the medical community. The degree of market acceptance of any product candidates we may develop, if approved for commercial sale, will depend on a number of factors, including:

- the efficacy and safety of such product candidates as demonstrated in clinical trials;
- the potential and perceived advantages compared to alternative treatments;
- the limitation to our targeted patient population and limitations or warnings contained in approved labeling by the FDA or other regulatory authorities;

- the ability to offer our medicines for sale at competitive prices;
- convenience and ease of administration compared to alternative treatments;
- the clinical indications for which the product candidate is approved by the FDA, the EMA, or other regulatory agencies;
- public attitudes regarding genetic medicine generally and gene editing and base editing technologies specifically;
- the willingness of the target patient population to try novel therapies and of physicians to prescribe these therapies, as well as their willingness to accept a therapeutic intervention that involves the editing of the patient's gene;
- product labeling or product insert requirements of the FDA, the EMA, or other regulatory authorities, including any limitations or warnings contained in a product's approved labeling;
- relative convenience and ease of administration;
- the timing of market introduction of competitive products;
- publicity concerning our products or competing products and treatments;
- the strength of marketing and distribution support;
- sufficient third-party coverage or reimbursement; and
- the prevalence and severity of any side effects.

Even if any of our product candidates we may develop are approved, such products may not achieve an adequate level of acceptance, we may not generate significant product revenues, and we may not become profitable.

If, in the future, we are unable to establish sales and marketing capabilities or enter into agreements with third parties to sell and market any product candidates we may develop, we may not be successful in commercializing those product candidates if and when they are approved.

We do not have a sales or marketing infrastructure and have limited experience in the sale, marketing, or distribution of pharmaceutical products. To achieve commercial success for any approved medicine for which we retain sales and marketing responsibilities, we must either develop a sales and marketing organization or outsource these functions to third parties. In the future, we may choose to build a focused sales, marketing, and commercial support infrastructure to sell, or participate in sales activities with our collaborators for, some of our product candidates we may develop if and when they are approved.

There are risks involved with both establishing our own commercial capabilities and entering into arrangements with third parties to perform these services. For example, recruiting and training a sales force or reimbursement specialists is expensive and time consuming and could delay any product launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing and other commercialization capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our commercialization personnel.

Factors that may inhibit our efforts to commercialize our product candidates we may develop on our own include:

- our inability to recruit and retain adequate numbers of effective sales, marketing, reimbursement, customer service, medical affairs, and other support personnel;

- the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe any future medicines;
- the inability of reimbursement professionals to negotiate arrangements for formulary access, reimbursement, and other acceptance by payors;
- restricted or closed distribution channels that make it difficult to distribute our product candidates we may develop to segments of the patient population;
- the lack of complementary medicines to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent commercialization organization.

If we enter into arrangements with third parties to perform sales, marketing, commercial support, and distribution services, our product revenues or the profitability of these product revenues to us may be lower than if we were to market and sell any medicines we may develop ourselves. In addition, we may not be successful in entering into arrangements with third parties to commercialize our product candidates we may develop or may be unable to do so on terms that are favorable to us. We may have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our medicines effectively. If we do not establish commercialization capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our product candidates we may develop.

We face significant competition in an environment of rapid technological change, and there is a possibility that our competitors may achieve regulatory approval before us or develop therapies that are safer or more advanced or effective than ours, which may harm our financial condition and our ability to successfully market or commercialize any product candidates we may develop.

The development and commercialization of new drug products is highly competitive. Moreover, the base editing field is characterized by rapidly changing technologies, significant competition, and a strong emphasis on intellectual property. We will face competition with respect to any product candidates that we may seek to develop or commercialize in the future from major pharmaceutical companies, specialty pharmaceutical companies, and biotechnology companies worldwide. Potential competitors also include academic institutions, government agencies, and other public and private research organizations that conduct research, seek patent protection, and establish collaborative arrangements for research, development, manufacturing, and commercialization.

There are a number of large pharmaceutical and biotechnology companies that currently market and sell products or are pursuing the development of products for the treatment of the disease indications for which we have research programs. Some of these competitive products and therapies are based on scientific approaches that are the same as or similar to our approach, and others are based on entirely different approaches.

There are several other companies utilizing CRISPR/Cas9 nuclease technology, including Caribou Biosciences, Editas Medicine, CRISPR Therapeutics, and Intellia Therapeutics. Several additional companies utilize other nuclease-based genome editing technologies, including Zinc Fingers, Arcuses, and TAL Nucleases, which includes Sangamo Biosciences, Precision BioSciences and bluebird bio. In addition, we face competition from companies utilizing gene therapy, oligonucleotides, and CAR-T therapeutic approaches.

Any product candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future that are approved to treat the same diseases for which we may obtain approval for our product candidates we may develop. This may include other types of therapies, such as small molecule, antibody, and/or protein therapies.

Many of our current or potential competitors, either alone or with their collaboration partners, may have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals, and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical, biotechnology, and gene therapy industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize product candidates that are safer, more effective, have fewer or less severe side effects, are more convenient, or are less expensive than any product candidates that we may develop or that would render any product candidates that we may develop obsolete or non-competitive. Our competitors also may obtain FDA or other regulatory approval for their product candidates more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market. Additionally, technologies developed by our competitors may render our potential product candidates uneconomical or obsolete, and we may not be successful in marketing any product candidates we may develop against competitors.

In addition, as a result of the expiration or successful challenge of our patent rights, we could face more litigation with respect to the validity and/or scope of patents relating to our competitors' products. The availability of our competitors' products could limit the demand, and the price we are able to charge, for any product candidates that we may develop and commercialize.

Adverse public perception of genetic medicines, and gene editing and base editing in particular, may negatively impact regulatory approval of, and/or demand for, our potential products.

Our potential therapeutic products involve editing the human genome. The clinical and commercial success of our potential products will depend in part on public understanding and acceptance of the use of gene editing therapy for the prevention or treatment of human diseases. Public attitudes may be influenced by claims that gene editing is unsafe, unethical, or immoral, and, consequently, our product candidates may not gain the acceptance of the public or the medical community. For example, a public backlash developed against gene therapy following the death of a patient in 1999 during a gene therapy clinical trial. The death of the clinical trial subject was due to complications related to AAV vector administration. Adverse public attitudes may adversely impact our ability to enroll clinical trials. Moreover, our success will depend upon physicians prescribing, and their patients being willing to receive, treatments that involve the use of product candidates we may develop in lieu of, or in addition to, existing treatments with which they are already familiar and for which greater clinical data may be available.

In addition, gene editing technology is subject to public debate and heightened regulatory scrutiny due to ethical concerns relating to the application of gene editing technology to human embryos or the human germline. For example, academic scientists in several countries, including the United States, have reported on their attempts to edit the gene of human embryos as part of basic research. In addition, in November 2018, Dr. Jiankui He, a Chinese biophysics researcher who was an associate professor in the Department of Biology of the Southern University of Science and Technology in Shenzhen, China, reportedly claimed he had created the first human genetically edited babies, twin girls. This claim, and another that Dr. He had helped create a second gene-edited pregnancy, was subsequently confirmed by Chinese authorities and was negatively received by the public, in particular those in the scientific community. In the wake of the claim, the World Health Organization established a new advisory committee to create global governance and oversight standards for human gene editing.

Regulation of gene editing technology varies across jurisdictions. In the United States, germline editing for clinical application has been expressly prohibited since enactment of a December 2015 FDA ban on such activity. Prohibitions are also in place in the United Kingdom, across most of Europe, in China, and many other countries around the world. In the United States, the National Institutes of Health, or NIH, has announced that the agency would not fund any use of gene editing technologies in human embryos, noting that there are multiple existing legislative and regulatory prohibitions against such work, including the Dickey-Wicker Amendment, which prohibits the use of appropriated funds for the creation of human embryos for research purposes or for research in which human embryos are destroyed. Laws in the United Kingdom prohibit genetically modified embryos from being implanted into women, except that mitochondrial replacement therapy has been permitted in the United Kingdom since 2016. Separately, embryos can be altered in the United Kingdom in research labs under license from the Human Fertilisation and Embryology Authority. Research on embryos is more tightly controlled in some other European countries.

Moreover, in an annual worldwide threat assessment report delivered to the U.S. Congress in February 2016, the U.S. Director of National Intelligence stated that research into gene editing that is conducted under different regulatory standards than those of Western countries probably increases the risk of the creation of potentially harmful biological agents or products, including weapons of mass destruction. He noted that given the broad distribution, low cost, and accelerated pace of development of gene editing technology, its deliberate or unintentional misuse could have far-reaching economic and national security implications.

Although we do not use our technologies to edit human embryos or the human germline, such public debate about the use of gene editing technologies in human embryos and heightened regulatory scrutiny could prevent or delay our development of product candidates. More restrictive government regulations or negative public opinion would have a negative effect on our business or financial condition and may delay or impair our development and commercialization of product candidates or demand for any product candidates we may develop. Adverse events in our preclinical studies or clinical trials or those of our competitors or of academic researchers utilizing gene editing technologies, even if not ultimately attributable to product candidates we may identify and develop, and the gene publicity could result in increased governmental regulation, unfavorable public perception, potential regulatory delays in the testing or approval of potential product candidates we may identify and develop, stricter labeling requirements for those product candidates that are approved, and a decrease in demand for any such product candidates. Use of gene editing technology by a third party or government to develop biological agents or products that threaten U.S. national security could similarly result in such negative impacts to us.

Even if we are able to commercialize any product candidates, such products may become subject to unfavorable pricing regulations, third-party reimbursement practices, or healthcare reform initiatives, which would harm our business.

The regulations that govern marketing approvals, pricing, and reimbursement for new medicines vary widely from country to country. Some countries require approval of the sale price of a medicine before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a medicine in a particular country, but then be subject to price regulations that delay or might even prevent our commercial launch of the medicine, possibly for lengthy time periods, and negatively impact the revenues we are able to generate from the sale of the medicine in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates we may develop, even if any product candidates we may develop obtain marketing approval.

Our ability to commercialize any medicines successfully also will depend in part on the extent to which reimbursement for these medicines and related treatments will be available from government authorities or healthcare program, private health plans, and other organizations. Government authorities and third-party payors, such as private health plans, decide which medications they will pay for and establish reimbursement levels. A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Increasingly, third-party payors are challenging the prices charged for medical products and requiring that drug companies provide them with predetermined discounts from list prices. Novel medical products, if covered at all, may be subject to enhanced utilization management controls designed to ensure that the products are used only when medically necessary. Such utilization management controls may discourage the prescription or use of a medical product by increasing the administrative burden associated with its prescription or creating coverage uncertainties for prescribers and patients. We cannot be sure that reimbursement will be available for any medicine that we commercialize and, if reimbursement is available, the level of reimbursement will be adequate. Reimbursement may impact the demand for, or the price of, any product candidate for which we obtain marketing approval. If reimbursement is not available or is available only to limited levels, we may not be able to successfully commercialize any product candidate for which we obtain marketing approval.

There may be significant delays in obtaining reimbursement for newly approved medicines, and coverage may be more limited than the purposes for which the medicine is approved by the FDA, the EMA or other regulatory authorities outside the United States. Moreover, eligibility for reimbursement does not imply that any medicine will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale, and distribution. Interim reimbursement levels for new medicines, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Reimbursement rates may vary according to the use of the medicine and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost medicines and may be incorporated into existing payments for other services. Net prices for medicines may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of medicines from countries where they may be sold at lower prices than in the United States. Our inability to promptly obtain coverage and profitable payment rates from both government-funded and private payors for any approved medicines we may develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize medicines, and our overall financial condition.

Due to the novel nature of our technology and the potential for any product candidates we may develop to offer therapeutic benefit in a single administration or limited number of administrations, we face uncertainty related to pricing and reimbursement for these product candidates.

Our initial target patient populations are relatively small, as a result of which the pricing and reimbursement of any product candidates we may develop, if approved, must be adequate to support the necessary commercial infrastructure. If we are unable to obtain adequate levels of reimbursement, our ability to successfully market and sell any such product candidates will be adversely affected. The manner and level at which reimbursement is provided for services related to any product candidates we may develop (e.g., for administration of our product candidate to patients) is also important. Inadequate reimbursement for such services may lead to physician and payor resistance and adversely affect our ability to market or sell our product candidates we may develop. In addition, we may need to develop new reimbursement models in order to realize adequate value. Payors may not be able or willing to adopt such new models, and patients may be unable to afford that portion of the cost that such models may require them to bear. If we determine such new models are necessary but we are unsuccessful in developing them, or if such models are not adopted by payors, our business, financial condition, results of operations, and prospects could be adversely affected.

We expect the cost of a single administration of genetic medicines, such as those we are seeking to develop, to be substantial, when and if they achieve regulatory approval. We expect that coverage and reimbursement by government and private payors will be essential for most patients to be able to afford these treatments. Accordingly, sales of any such product candidates will depend substantially, both domestically and abroad, on the extent to which the costs of any product candidates we may develop will be paid by government authorities, private health plans, and other third-party payors. Payors may not be willing to pay high prices for a single administration. Coverage and reimbursement by a third-party payor may depend upon several factors, including the third-party payor's determination that use of a product is:

- a covered benefit under its health plan;
- safe, effective, and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

Obtaining coverage and reimbursement for a product from third-party payors is a time-consuming and costly process that could require us to provide to the payor supporting scientific, clinical, and cost-effectiveness data. There is significant uncertainty related to third-party coverage and reimbursement of newly approved products. We may not be able to provide data sufficient to gain acceptance with respect to coverage and reimbursement. If coverage and reimbursement are not available, or are available only at limited levels, we may not be able to successfully commercialize any product candidates we may develop. Even if coverage is provided, the approved reimbursement amount may not be adequate to realize a sufficient return on our investment.

Moreover, the downward pressure on healthcare costs in general, particularly prescription drugs and surgical procedures and other treatments, has become intense. As a result, increasingly high barriers are being erected to the entry of new product candidates such as ours. If we are unable to obtain adequate levels of reimbursement, our ability to successfully market and sell any product candidates we may develop will be harmed.

If the market opportunities for any product candidates we may develop are smaller than we believe they are, our potential revenues may be adversely affected, and our business may suffer. Because the target patient populations for many of the product candidates we may develop are small, we must be able to successfully identify patients and achieve a significant market share to maintain profitability and growth.

We focus our research and product development on treatments for rare genetically defined diseases. Many of our product candidates we may develop are expected to target a single mutation; as a result, the relevant patient population may therefore be small. Our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with product candidates we may develop, are based on estimates. These estimates may prove to be incorrect and new studies may change the estimated incidence or prevalence of these diseases. The number of patients in the United States, Europe, and elsewhere may turn out to be lower than expected, and patients may not be amenable to treatment with our product candidates we may develop, or may become increasingly difficult to identify or gain access to, all of which would adversely affect our business, financial condition, results of operations, and prospects. Additionally, because of the potential that any product candidates we develop could cure a target disease, we may not receive recurring revenues from patients and may deplete the patient population prevalence through curative therapy.

Product liability lawsuits against us could cause us to incur substantial liabilities and could limit commercialization of any medicines that we may develop.

We face an inherent risk of product liability exposure related to the testing in human clinical trials of any product candidates we may develop and will face an even greater risk if we commercially sell any medicines that we may develop. If we cannot successfully defend ourselves against claims that our product candidates or medicines caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or medicines that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant time and costs to defend the related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue; and
- the inability to commercialize any medicines that we may develop.

Although we maintain product liability insurance coverage, it may not be adequate to cover all liabilities that we may incur. We anticipate that we will need to increase our insurance coverage when we begin clinical trials and if we successfully commercialize any medicine. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

If we or any contract manufacturers and suppliers we engage fail to comply with environmental, health, and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on the success of our business.

We and any contract manufacturers and suppliers we engage are subject to numerous federal, state, and local environmental, health, and safety laws, regulations, and permitting requirements, including those governing laboratory procedures; the generation, handling, use, storage, treatment, and disposal of hazardous and regulated materials and wastes; the emission and discharge of hazardous materials into the ground, air, and water; and employee health and safety. Our operations involve the use of hazardous and flammable materials, including chemicals and biological and radioactive materials. Our operations also produce hazardous waste. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. Under certain environmental laws, we could be held responsible for costs relating to any contamination at our current or past facilities and at third-party facilities. We also could incur significant costs associated with civil or criminal fines and penalties.

Compliance with applicable environmental laws and regulations may be expensive, and current or future environmental laws and regulations may impair our research and product development efforts. In addition, we cannot entirely eliminate the risk of accidental injury or contamination from these materials or wastes. Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities. We do not carry specific biological or hazardous waste insurance coverage, and our property, casualty, and general liability insurance policies (under which we currently have an aggregate of approximately $9.0 million in coverage) specifically exclude coverage for damages and fines arising from biological or hazardous waste exposure or contamination. Accordingly, in the event of contamination or injury, we could be held liable for damages or be penalized with fines in an amount exceeding

our resources, and our clinical trials or regulatory approvals could be suspended, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

In addition, we may incur substantial costs in order to comply with current or future environmental, health, and safety laws, regulations, and permitting requirements. These current or future laws, regulations, and permitting requirements may impair our research, development, or production efforts. Failure to comply with these laws, regulations, and permitting requirements also may result in substantial fines, penalties, or other sanctions or business disruption, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Any third-party contract manufacturers and suppliers we engage will also be subject to these and other environmental, health, and safety laws and regulations. Liabilities they incur pursuant to these laws and regulations could result in significant costs or an interruption in operations, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Genetic medicines are novel, and any product candidates we develop may be complex and difficult to manufacture. We could experience delays in satisfying regulatory authorities or production problems that result in delays in our development or commercialization programs, limit the supply of our product candidates we may develop, or otherwise harm our business.

Any product candidates we may develop will likely require processing steps that are more complex than those required for most chemical pharmaceuticals. Moreover, unlike chemical pharmaceuticals, the physical and chemical properties of a biologic such as the product candidates we intend to develop generally cannot be fully characterized. As a result, assays of the finished product candidate may not be sufficient to ensure that the product candidate will perform in the intended manner. Problems with the manufacturing process, even minor deviations from the normal process, could result in product defects or manufacturing failures that result in lot failures, product recalls, product liability claims, insufficient inventory, or potentially delay progression of our potential IND filings. If we successfully develop product candidates, we may encounter problems achieving adequate quantities and quality of clinical-grade materials that meet FDA, EMA or other comparable applicable foreign standards or specifications with consistent and acceptable production yields and costs. For example, the current approach of manufacturing AAV vectors may fall short of supplying required number of doses needed for advanced stages of pre-clinical studies or clinical trials, and the FDA may ask us to demonstrate that we have the appropriate manufacturing processes in place to support the higher-dose group in our future pre-clinical studies or clinical trials. In addition, our product candidates we may develop will require complicated delivery modalities, such as electroporation, LNPs, or viral vectors, each of which will introduce additional complexities in the manufacturing process.

In addition, the FDA, the EMA, and other regulatory authorities may require us to submit samples of any lot of any approved product together with the protocols showing the results of applicable tests at any time. Under some circumstances, the FDA, the EMA, or other regulatory authorities may require that we not distribute a lot until the agency authorizes its release. Slight deviations in the manufacturing process, including those affecting quality attributes and stability, may result in unacceptable changes in the product that could result in lot failures or product recalls. Lot failures or product recalls could cause us to delay clinical trials or product launches, which could be costly to us and otherwise harm our business, financial condition, results of operations, and prospects.

Furthermore, we intend to use novel split intein technology for any AAV gene therapy that allows us to deliver the base editor and guide RNA construct by co-infection with two viruses, where each virus contains one half of the editor. The scientific evidence to support the feasibility of developing product candidates based on this technology is both preliminary and limited.

We also may encounter problems hiring and retaining the experienced scientific, quality control, and manufacturing personnel needed to manage our manufacturing process, which could result in delays in our production or difficulties in maintaining compliance with applicable regulatory requirements.

Given the nature of biologics manufacturing, including for the lentivirus vectors and AAV vectors, there is a risk of contamination during manufacturing. Any contamination could materially harm our ability to produce product candidates on schedule and could harm our results of operations and cause reputational damage. Some of the raw materials that we anticipate will be required in our manufacturing process are derived from biologic sources. Such raw materials are difficult to procure and may be subject to contamination or recall. A material shortage, contamination, recall, or restriction on the use of biologically derived substances in the manufacture of any product candidates we may develop could adversely impact or disrupt the commercial manufacturing or the production of clinical material, which could materially harm our development timelines and our business, financial condition, results of operations, and prospects.

Any problems in our manufacturing process or the facilities with which we contract could make us a less attractive collaborator for potential partners, including larger pharmaceutical companies and academic research institutions, which could limit our access to additional attractive development programs. Problems in third-party manufacturing process or facilities also could restrict our ability to ensure sufficient clinical material for any clinical trials we may be conducting or are planning to conduct and meet market demand for any product candidates we develop and commercialize.

Risks related to regulatory review

Because base editing is novel and the regulatory landscape that will govern any product candidates we may develop is uncertain and may change, we cannot predict the time and cost of obtaining regulatory approval, if we receive it at all, for any product candidates we may develop.

The regulatory requirements that will govern any novel base editing product candidates we develop are not entirely clear and may change. Within the broader genetic medicine field, we are aware of a limited number of gene therapy products that have received marketing authorization from the FDA and the EMA. Even with respect to more established products that fit into the categories of gene therapies or cell therapies, the regulatory landscape is still developing. Regulatory requirements governing gene therapy products and cell therapy products have changed frequently and will likely continue to change in the future. Moreover, there is substantial, and sometimes uncoordinated, overlap in those responsible for regulation of existing gene therapy products and cell therapy products. For example, in the United States, the FDA has established the Office of Tissues and Advanced Therapies within its Center for Biologics Evaluation and Research, or CBER, to consolidate the review of gene therapy and related products, and the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER on its review. Gene therapy clinical trials are also subject to review and oversight by an institutional biosafety committee, or IBC, a local institutional committee that reviews and oversees basic and clinical research conducted at the institution participating in the clinical trial. Although the FDA decides whether individual gene therapy protocols may proceed, the review process and determinations of other reviewing bodies can impede or delay the initiation of a clinical trial, even if the FDA has reviewed the trial and approved its initiation.

The same applies in the European Union, or the EU. The EMA's Committee for Advanced Therapies, or CAT, is responsible for assessing the quality, safety, and efficacy of advanced-therapy medicinal products. The role of the CAT is to prepare a draft opinion on an application for marketing authorization for a gene therapy medicinal candidate that is submitted to the Committee for Medicinal Products for Human Use, or CHMP, before CHMP adopts its final opinion. In the European Union, the development and evaluation of a gene therapy medicinal product must be considered in the context of the relevant European Union guidelines. The EMA may issue new

guidelines concerning the development and marketing authorization for gene therapy medicinal products and require that we comply with these new guidelines. As a result, the procedures and standards applied to gene therapy products and cell therapy products may be applied to any product candidates we may develop, but that remains uncertain at this point.

Adverse developments in post-marketing experience or in clinical trials conducted by others of gene therapy products, cell therapy products, or products developed through the application of a base editing or other gene editing technology may cause the FDA, the EMA, and other regulatory bodies to revise the requirements for development or approval of any product candidates we may develop or limit the use of products utilizing base editing technologies, either of which could materially harm our business. In addition, the clinical trial requirements of the FDA, the EMA, and other regulatory authorities and the criteria these regulators use to determine the safety and efficacy of a product candidate vary substantially according to the type, complexity, novelty, and intended use and market of the potential products. The regulatory approval process for novel product candidates such as the product candidates we may develop can be more expensive and take longer than for other, better known, or more extensively studied pharmaceutical or other product candidates. Regulatory agencies administering existing or future regulations or legislation may not allow production and marketing of products utilizing base editing technology in a timely manner or under technically or commercially feasible conditions. In addition, regulatory action or private litigation could result in expenses, delays, or other impediments to our research programs or the commercialization of resulting products.

The regulatory review committees and advisory groups described above and the new guidelines they promulgate may lengthen the regulatory review process, require us to perform additional studies or trials, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of these treatment candidates, or lead to significant post-approval limitations or restrictions. As we advance our research programs and develop future product candidates, we will be required to consult with these regulatory and advisory groups and to comply with applicable guidelines. If we fail to do so, we may be required to delay or discontinue development of any product candidates we identify and develop.

Because we are developing product candidates in the field of genetics medicines, a field that includes gene therapy and gene editing, in which there is little clinical experience, there is increased risk that the FDA, the EMA, or other regulatory authorities may not consider the endpoints of our clinical trials to provide clinically meaningful results and that these results may be difficult to analyze.

During the regulatory review process, we will need to identify success criteria and endpoints such that the FDA, the EMA, or other regulatory authorities will be able to determine the clinical efficacy and safety profile of any product candidates we may develop. As we are initially seeking to identify and develop product candidates to treat diseases in which there is little clinical experience using new technologies, there is heightened risk that the FDA, the EMA, or other regulatory authorities may not consider the clinical trial endpoints that we propose to provide clinically meaningful results (reflecting a tangible benefit to patients). In addition, the resulting clinical data and results may be difficult to analyze. Even if the FDA does find our success criteria to be sufficiently validated and clinically meaningful, we may not achieve the pre-specified endpoints to a degree of statistical significance. This may be a particularly significant risk for many of the genetically defined diseases for which we plan to develop product candidates because many of these diseases, including T-cell acute lymphoblastic leukemia, glycogen storage disorder and Stargardt disease, have small patient populations, and designing and executing a rigorous clinical trial with appropriate statistical power is more difficult than with diseases that have larger patient populations. Further, even if we do achieve the pre-specified criteria, we may produce results that are unpredictable or inconsistent with the results of the non-primary endpoints or other relevant data. The FDA also weighs the benefits of a product against its risks, and the FDA may view the efficacy results in the context of safety as not being supportive of regulatory approval. Other regulatory authorities in

the European Union and other countries may make similar comments with respect to these endpoints and data. Any product candidates we may develop will be based on a novel technology that makes it difficult to predict the time and cost of development and of subsequently obtaining regulatory approval. No gene editing therapeutic product has been approved in the United States or in Europe.

If clinical trials of any product candidates we may identify and develop fail to demonstrate safety and efficacy to the satisfaction of regulatory authorities or do not otherwise produce positive results, we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of such product candidates.

Before obtaining marketing approval from regulatory authorities for the sale of any product candidates we identify and develop, we must complete preclinical development and then conduct extensive clinical trials to demonstrate the safety and efficacy in humans. Clinical testing is expensive, difficult to design and implement, can take many years to complete, and is uncertain as to outcome. A failure of one or more clinical trials can occur at any stage of testing. The outcome of preclinical testing and early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results.

Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses. Many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their product candidates.

We and our collaborators, if any, may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent our ability to receive marketing approval or commercialize any product candidates we may identify and develop, including:

- delays in reaching a consensus with regulators on trial design;
- regulators, institutional review boards, or IRBs, or independent ethics committees may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- delays in reaching or failing to reach agreement on acceptable clinical trial contracts or clinical trial protocols with prospective contract research organizations, or CROs, and clinical trial sites;
- clinical trials of any product candidates we may develop may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical trials or abandon product development or research programs;
- difficulty in designing well-controlled clinical trials due to ethical considerations which may render it inappropriate to conduct a trial with a control arm that can be effectively compared to a treatment arm;
- difficulty in designing clinical trials and selecting endpoints for diseases that have not been well-studied and for which the natural history and course of the disease is poorly understood;
- the number of patients required for clinical trials of any product candidates we may develop may be larger than we anticipate; enrollment of suitable participants in these clinical trials, which may be particularly challenging for some of the rare genetically defined diseases we are targeting in our most advanced programs, may be delayed or slower than we anticipate; or patients may drop out of these clinical trials at a higher rate than we anticipate;
- our third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all;
- regulators, IRBs, or independent ethics committees may require that we or our investigators suspend or terminate clinical research or clinical trials of any product candidates we may develop for various reasons,

including noncompliance with regulatory requirements, a finding of undesirable side effects or other unexpected characteristics, or that the participants are being exposed to unacceptable health risks or after an inspection of our clinical trial operations or trial sites;

- the cost of clinical trials of any product candidates we may develop may be greater than we anticipate;
- the supply or quality of any product candidates we may develop or other materials necessary to conduct clinical trials of any product candidates we may develop may be insufficient or inadequate, including as a result of delays in the testing, validation, manufacturing, and delivery of any product candidates we may develop to the clinical sites by us or by third parties with whom we have contracted to perform certain of those functions;
- delays in having patients complete participation in a trial or return for post-treatment follow-up;
- clinical trial sites dropping out of a trial;
- selection of clinical endpoints that require prolonged periods of clinical observation or analysis of the resulting data;
- occurrence of serious adverse events associated with any product candidates we may develop that are viewed to outweigh their potential benefits;
- occurrence of serious adverse events in trials of the same class of agents conducted by other sponsors; and
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols.

If we or our collaborators are required to conduct additional clinical trials or other testing of any product candidates we may develop beyond those that we currently contemplate, if we or our collaborators are unable to successfully complete clinical trials or other testing of any product candidates we may develop, or if the results of these trials or tests are not positive or are only modestly positive or if there are safety concerns, we or our collaborators may:

- be delayed in obtaining marketing approval for any such product candidates we may develop or not obtain marketing approval at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings, including boxed warnings;
- be subject to changes in the way the product is administered;
- be required to perform additional clinical trials to support approval or be subject to additional post-marketing testing requirements;
- have regulatory authorities withdraw, or suspend, their approval of the product or impose restrictions on its distribution in the form of a REMS or through modification to an existing REMS;
- be sued; or
- experience damage to our reputation.

Product development costs will also increase if we or our collaborators experience delays in clinical trials or other testing or in obtaining marketing approvals. We do not know whether any clinical trials will begin as

planned, will need to be restructured, or will be completed on schedule, or at all. Significant clinical trial delays also could shorten any periods during which we may have the exclusive right to commercialize any product candidates we may develop, could allow our competitors to bring products to market before we do, and could impair our ability to successfully commercialize any product candidates we may develop, any of which may harm our business, financial condition, results of operations, and prospects.

If we experience delays or difficulties in the enrollment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.

We or our collaborators may not be able to initiate or continue clinical trials for any product candidates we identify or develop if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA, the EMA or other analogous regulatory authorities outside the United States, or as needed to provide appropriate statistical power for a given trial. Enrollment may be particularly challenging for some of the rare genetically defined diseases we are targeting in our most advanced programs. In addition, if patients are unwilling to participate in our base editing trials because of negative publicity from adverse events related to the biotechnology, gene therapy, or gene editing fields, competitive clinical trials for similar patient populations, clinical trials in competing products, or for other reasons, the timeline for recruiting patients, conducting studies, and obtaining regulatory approval of any product candidates we may develop may be delayed. Moreover, some of our competitors may have ongoing clinical trials for product candidates that would treat the same indications as any product candidates we may develop, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' product candidates.

Patient enrollment is also affected by other factors, including:

- severity of the disease under investigation;
- size of the patient population and process for identifying patients;
- design of the trial protocol;
- availability and efficacy of approved medications for the disease under investigation;
- availability of genetic testing for potential patients;
- ability to obtain and maintain patient informed consent;
- risk that enrolled patients will drop out before completion of the trial;
- eligibility and exclusion criteria for the trial in question;
- perceived risks and benefits of the product candidate under trial;
- perceived risks and benefits of base editing as a therapeutic approach;
- efforts to facilitate timely enrollment in clinical trials;
- patient referral practices of physicians;
- ability to monitor patients adequately during and after treatment; and
- proximity and availability of clinical trial sites for prospective patients, especially for those conditions which have small patient pools.

Our ability to successfully initiate, enroll, and complete a clinical trial in any foreign country is subject to numerous risks unique to conducting business in foreign countries, including:

- difficulty in establishing or managing relationships with CROs and physicians;
- different standards for the conduct of clinical trials;
- different standard-of-care for patients with a particular disease;
- difficulty in locating qualified local consultants, physicians, and partners; and
- potential burden of complying with a variety of foreign laws, medical standards, and regulatory requirements, including the regulation of pharmaceutical and biotechnology products and treatment and of gene editing technologies.

Enrollment delays in our clinical trials may result in increased development costs for any product candidates we may develop, which would cause the value of our company to decline and limit our ability to obtain additional financing. If we or our collaborators have difficulty enrolling a sufficient number of patients to conduct our clinical trials as planned, we may need to delay, limit, or terminate ongoing or planned clinical trials, any of which would have an adverse effect on our business, financial condition, results of operations, and prospects.

If we are unable to successfully identify patients who are likely to benefit from therapy with any product candidates we develop, or experience significant delays in doing so, we may not realize the full commercial potential of any medicines we may develop.

Our success may depend, in part, on our ability to identify patients who are likely to benefit from therapy with any medicines we may develop, which requires those potential patients to have their DNA analyzed for the presence or absence of a particular sequence. If we, or any third parties that we engage to assist us, are unable to successfully identify such patients, or experience delays in doing so, then:

- our ability to develop any product candidates may be adversely affected if we are unable to appropriately select patients for enrollment in our clinical trials; and
- we may not realize the full commercial potential of any product candidates we develop that receive marketing approval if, among other reasons, we are unable to appropriately select patients who are likely to benefit from therapy with our medicines.

Any product candidates we develop may require use of a companion diagnostic to identify patients who are likely to benefit from therapy. If safe and effective use of any of our product candidates we may develop depends on a companion diagnostic, we may not receive marketing approval, or marketing approval may be delayed, if we are unable to or are delayed in developing, identifying, or obtaining regulatory approval or clearance for the companion diagnostic product for use with our product candidate. Identifying a manufacturer of the companion diagnostic and entering into an agreement with the manufacturer could also delay the development of our product candidates.

As a result of these factors, we may be unable to successfully develop and realize the commercial potential of any product candidates we may identify and develop, and our business, financial condition, results of operations, and prospects would be materially adversely affected.

Risks related to our relationships with third parties

We expect to rely on third parties to manufacture components of our product candidates we may develop, conduct our clinical trials and some aspects of our research and preclinical testing, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials, research, or testing.

We expect to rely on third parties, such as CROs, clinical data management organizations, medical institutions, and clinical investigators, to manufacture components of our product candidates we may develop and to conduct our clinical trials. We currently rely and expect to continue to rely on third parties to conduct some aspects of our research and preclinical testing. For example, we rely on a third party to conduct electroporation; we rely on a third party to supply LNPs; and we rely on third parties to manufacture viral vectors. Any of these third parties may terminate their engagements with us at any time under certain criteria. If we need to enter into alternative arrangements, it may delay our product development activities.

Our reliance on these third parties for research and development activities will reduce our control over these activities but will not relieve us of our responsibilities. For example, we will remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA, EMA and other regulatory authorities require us to comply with standards, commonly referred to as Good Clinical Practices, for conducting, recording, and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity, and confidentiality of trial participants are protected. In the United States, we also are required to register ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within certain timeframes. Failure to do so can result in fines, adverse publicity, and civil and criminal sanctions.

Although we intend to design the clinical trials for our product candidates, CROs will conduct some or all of the clinical trials. As a result, many important aspects of our development programs, including their conduct and timing, will be outside of our direct control. Our reliance on third parties to conduct future preclinical studies and clinical trials will also result in less direct control over the management of data developed through preclinical studies and clinical trials than would be the case if we were relying entirely upon our own staff. Communicating with outside parties can also be challenging, potentially leading to mistakes as well as difficulties in coordinating activities. Outside parties may:

- have staffing difficulties;
- fail to comply with contractual obligations;
- experience regulatory compliance issues;
- undergo changes in priorities or become financially distressed; or
- form relationships with other entities, some of which may be our competitors.

These factors may materially adversely affect the willingness or ability of third parties to conduct our preclinical studies and clinical trials and may subject us to unexpected cost increases that are beyond our control. If the CROs and other third parties do not perform preclinical studies and future clinical trials in a satisfactory manner, breach their obligations to us or fail to comply with regulatory requirements, the development, regulatory approval and commercialization of our product candidates may be delayed, we may not be able to obtain regulatory approval and commercialize our product candidates, or our development programs may be materially and irreversibly harmed. If we are unable to rely on preclinical and clinical data collected by our CROs and other third parties, we could be required to repeat, extend the duration of, or increase the size of any preclinical studies or clinical trials we conduct and this could significantly delay commercialization and require greater expenditures.

We also expect to rely on other third parties to store and distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of any product candidates we may develop or commercialization of our medicines, producing additional losses and depriving us of potential product revenue.

We contract with third parties for the manufacture of materials for our research programs and preclinical studies and expect to continue to do so for clinical trials and for commercialization of any product candidates that we may develop. This reliance on third parties increases the risk that we will not have sufficient quantities of such materials, product candidates, or any medicines that we may develop and commercialize, or that such supply will not be available to us at an acceptable cost, which could delay, prevent, or impair our development or commercialization efforts.

We do not have any manufacturing facilities at the present time. We currently rely on third-party manufacturers for the manufacture of our materials for preclinical studies and may continue to do so for clinical testing and for commercial supply of any product candidates that we may develop and for which we or our collaborators obtain marketing approval. We do not have a long term supply agreement with any of the third-party manufacturers, and we purchase our required supply on a purchase order basis.

We may be unable to establish any agreements with third-party manufacturers or to do so on acceptable terms. Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- the possible breach of the manufacturing agreement by the third party;
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us; and
- reliance on the third party for regulatory compliance, quality assurance, safety, and pharmacovigilance and related reporting.

Third-party manufacturers may not be able to comply with cGMP regulations or similar regulatory requirements outside the United States. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocations, seizures or recalls of product candidates or medicines, operating restrictions, and criminal prosecutions, any of which could significantly and adversely affect supplies of our medicines and harm our business, financial condition, results of operations, and prospects.

Any medicines that we may develop may compete with other product candidates and products for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us.

Any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval. We do not currently have arrangements in place for redundant supply for bulk drug substances. If any one of our current contract manufacturer cannot perform as agreed, we may be required to replace that manufacturer. Although we believe that there are several potential alternative manufacturers who could manufacture any product candidates we may develop, we may incur added costs and delays in identifying and qualifying any such replacement.

Our current and anticipated future dependence upon others for the manufacture of any product candidates we may develop or medicines may adversely affect our future profit margins and our ability to commercialize any medicines that receive marketing approval on a timely and competitive basis.

We may enter into collaborations with third parties for the research, development, and commercialization of certain of the product candidates we may develop. If any such collaborations are not successful, we may not be able to capitalize on the market potential of those product candidates.

We may seek third-party collaborators for the research, development, and commercialization of certain of the product candidates we may develop. If we enter into any such arrangements with any third parties, we will likely have limited control over the amount and timing of resources that our collaborators dedicate to the development or commercialization of any product candidates we may seek to develop with them. Our ability to generate revenues from these arrangements will depend on our collaborators' abilities to successfully perform the functions assigned to them in these arrangements. We cannot predict the success of any collaboration that we enter into.

Collaborations involving our research programs or any product candidates we may develop pose numerous risks to us, including the following:

- Collaborators have significant discretion in determining the efforts and resources that they will apply to these collaborations.
- Collaborators may not pursue development and commercialization of any product candidates we may develop or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in the collaborator's strategic focus or available funding or external factors such as an acquisition that diverts resources or creates competing priorities.
- Collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials, or require a new formulation of a product candidate for clinical testing.
- Collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our medicines or product candidates we may develop if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours.
- Collaborators with marketing and distribution rights to one or more medicines may not commit sufficient resources to the marketing and distribution of such medicine or medicines.
- Collaborators may not properly obtain, maintain, enforce, or defend our intellectual property or proprietary rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our proprietary information or expose us to potential litigation.
- Disputes may arise between the collaborators and us that result in the delay or termination of the research, development, or commercialization of our medicines or product candidates or that result in costly litigation or arbitration that diverts management attention and resources.
- We may lose certain valuable rights under circumstances identified in our collaborations, including if we undergo a change of control.
- Collaborations may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates we may develop.
- Collaboration agreements may not lead to development or commercialization of product candidates in the most efficient manner or at all. If a present or future collaborator of ours were to be involved in a business combination, the continued pursuit and emphasis on our product development or commercialization program under such collaboration could be delayed, diminished, or terminated.

If our collaborations do not result in the successful development and commercialization of product candidates, or if one of our collaborators terminates its agreement with us, we may not receive any future research funding or milestone or royalty payments under the collaboration. If we do not receive the funding we expect under these agreements, our development of product candidates could be delayed, and we may need additional resources to develop product candidates. In addition, if one of our collaborators terminates its agreement with us, we may find it more difficult to find a suitable replacement collaborator or attract new collaborators, and our development programs may be delayed or the perception of us in the business and financial communities could be adversely affected. All of the risks relating to product development, regulatory approval, and commercialization described in this prospectus apply to the activities of our collaborators.

These relationships, or those like them, may require us to incur non-recurring and other charges, increase our near- and long-term expenditures, issue securities that dilute our existing stockholders, or disrupt our management and business. In addition, we could face significant competition in seeking appropriate collaborators, and the negotiation process is time-consuming and complex. Our ability to reach a definitive collaboration agreement will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration, and the proposed collaborator's evaluation of several factors. If we license rights to any product candidates we may develop we or our collaborators may develop, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture.

If conflicts arise between us and our collaborators or strategic partners, these parties may act in a manner adverse to us and could limit our ability to implement our strategies.

If conflicts arise between our corporate or academic collaborators or strategic partners and us, the other party may act in a manner adverse to us and could limit our ability to implement our strategies. Some of our academic collaborators and strategic partners are conducting multiple product development efforts within each area that is the subject of the collaboration with us. Our collaborators or strategic partners, however, may develop, either alone or with others, products in related fields that are competitive with the product candidates we may develop that are the subject of these collaborations with us. Competing products, either developed by the collaborators or strategic partners or to which the collaborators or strategic partners have rights, may result in the withdrawal of partner support for our product candidates we may develop.

Some of our collaborators or strategic partners could also become our competitors in the future. Our collaborators or strategic partners could develop competing products, preclude us from entering into collaborations with their competitors, fail to obtain timely regulatory approvals, terminate their agreements with us prematurely, or fail to devote sufficient resources to the development and commercialization of products. Any of these developments could harm our product development efforts.

If we are not able to establish collaborations on commercially reasonable terms, we may have to alter our development and commercialization plans.

Our product development and research programs and the potential commercialization of any product candidates we may develop will require substantial additional cash to fund expenses. For some of the product candidates we may develop, we may decide to collaborate with other pharmaceutical and biotechnology companies for the development and potential commercialization of those product candidates.

We face significant competition in seeking appropriate collaborators. Whether we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration, and the proposed collaborator's evaluation of a number of factors. Those factors may include the design or results of clinical trials, the likelihood of approval by the FDA, the EMA or similar regulatory authorities outside the United States, the potential market

for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing products, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge, and industry and market conditions generally. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us.

We may also be restricted under existing collaboration agreements from entering into future agreements on certain terms with potential collaborators. Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators.

We may not be able to negotiate collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of the product candidate for which we are seeking to collaborate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to develop product candidates or bring them to market and generate product revenue.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain patent and other intellectual property protection for any product candidates we develop and for our base editing platform technology, or if the scope of the patent and other intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products and technology similar or identical to ours, and our ability to successfully commercialize any product candidates we may develop, and our base editing platform technology may be adversely affected.

Our commercial success will depend in large part on our ability to obtain and maintain patent, trademark, trade secret and other intellectual property protection of our base editing platform technology, product candidates and other technology, methods used to manufacture them and methods of treatment, as well as successfully defending our patent and other intellectual property rights against third-party challenges. It is difficult and costly to protect our base editing platform technology and protect candidates, and we may not be able to ensure their protection. Our ability to stop unauthorized third parties from making, using, selling, offering to sell, importing or otherwise commercializing our product candidates we may develop is dependent upon the extent to which we have rights under valid and enforceable patents or trade secrets that cover these activities.

We seek to protect our proprietary position by in-licensing intellectual property relating to our platform technology and filing patent applications in the United States and abroad related to our base editing platform technology and product candidates that are important to our business. If we or our licensors are unable to obtain or maintain patent protection with respect to our base editing platform technology and product candidates we may develop, or if the scope of the patent protection secured is not sufficiently broad, our competitors could develop and commercialize products and technology similar or identical to ours and our ability to commercialize any product candidates we may develop may be adversely affected.

The patent prosecution process is expensive, time-consuming, and complex, and we may not be able to file, prosecute, maintain, enforce, or license all necessary or desirable patent applications at a reasonable cost or in

a timely manner. In addition, we may not pursue or obtain patent protection in all relevant markets. It is also possible that we will fail to identify patentable aspects of our research and development output in time to obtain patent protection. Although we enter into non-disclosure and confidentiality agreements with parties who have access to confidential or patentable aspects of our research and development output, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors, and other third parties, any of these parties may breach the agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek patent protection. In addition, our ability to obtain and maintain valid and enforceable patents depends on whether the differences between our inventions and the prior art allow our inventions to be patentable over the prior art. Furthermore, publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot be certain that we or our licensors were the first to make the inventions claimed in our owned or any licensed patents or pending patent applications, or that we or our licensors were the first to file for patent protection of such inventions.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions, and has been the subject of much litigation in recent years. The field of genome editing, especially in the area of base editing technology, has been the subject of extensive patenting activity and litigation. As a result, the issuance, scope, validity, enforceability, and commercial value of our patent rights are highly uncertain and we may become involved in complex and costly litigation. Our pending and future patent applications may not result in patents being issued which protect our base editing platform technology and product candidates we may develop or which effectively prevent others from commercializing competitive technologies and product candidates.

No consistent policy regarding the scope of claims allowable in the field of genome editing, including base editing technology, has emerged in the United States. The scope of patent protection outside of the United States is also uncertain. Changes in either the patent laws or their interpretation in the United States and other countries may diminish our ability to protect our inventions, obtain, maintain, enforce and defend our intellectual property rights and, more generally, could affect the value of our intellectual property or narrow the scope of our owned and licensed patent rights. With respect to both in-licensed and owned intellectual property, we cannot predict whether the patent applications we and our licensors are currently pursuing will issue as patents in any particular jurisdiction or whether the claims of any issued patents will be valid and enforceable and provide sufficient protection from competitors.

Moreover, the coverage claimed in a patent application can be significantly reduced before the patent is issued, and its scope can be reinterpreted after issuance. Even if patent applications we license or own currently or in the future issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors or other third parties from competing with us, or otherwise provide us with any competitive advantage. Any patents that we own or in-license may be challenged, narrowed, circumvented, or invalidated by third parties. Consequently, we do not know whether any of our platform advances and product candidates we may develop will be protectable or remain protected by valid and enforceable patents. Our competitors or other third parties may be able to circumvent our patents by developing similar or alternative technologies or products in a non-infringing manner.

In addition, given the amount of time required for the development, testing, and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our intellectual property may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours. Moreover, some of our owned and in-licensed patents and patent applications are, and may in the future be, co-owned with third parties. For example, a patent application directed to our potential HBG1 and HBG2 product candidates is co-owned by us, the President

and Fellows of Harvard College, or Harvard, and The Broad Institute, Inc., or the Broad. At present, we do not have a license to the ownership interest of Harvard or the Broad. If we are unable to obtain an exclusive license to such third-party co-owners' interest in such patents or patent applications, such co-owners may be able to license their rights to other third parties, including our competitors, and our competitors could market competing products and technology. In addition, we may need the cooperation of any such co-owners of our patents in order to enforce such patents against third parties, and such cooperation may not be provided to us. Any of the foregoing could have a material adverse effect on our competitive position, business, financial conditions, results of operations, and prospects.

Our rights to develop and commercialize our base editing platform technology and product candidates are subject, in part, to the terms and conditions of licenses granted to us by others.

We depend on intellectual property licensed from third parties, and our licensors may not always act in our best interest. If we fail to comply with our obligations under our intellectual property licenses, if the licenses are terminated, or if disputes regarding these licenses arise, we could lose significant rights that are important to our business.

We have licensed and are dependent on certain patent rights and proprietary technology from third parties that are important or necessary to the development of our base editing technology and product candidates. For example, we are a party to license agreements with the Broad, Editas Medicine, Inc., or Editas, Harvard, and Bio Palette Co. Ltd., or Bio Palette, and others, pursuant to which we in-license key patents and patent applications for our base editing platform technology and product candidates (the Broad License Agreement, the Editas License Agreement, the Harvard License Agreement and the Bio Palette License Agreement, respectively). These license agreements impose various diligence, milestone payment, royalty, insurance, and other obligations on us. If we fail to comply with these obligations, our licensors may have the right to terminate our license, in which event we would not be able to develop or market our base editing platform or any other technology or product candidates covered by the intellectual property licensed under these agreements. For example, under the Harvard License Agreement, we are required to initiate a discovery program in accordance with the development plan and development milestones for the development of a licensed product covered by certain sub-categories of licensed patents. If we fail to initiate such a discovery program, our rights with respect to the sub-category of licensed patents will terminate. For more information regarding these agreements, please see "Business—License Agreements."

These and other licenses may not provide exclusive rights to use such intellectual property and technology in all relevant fields of use and in all territories in which we may wish to develop or commercialize our base editing platform technology and product candidates in the future. Some licenses granted to us are expressly subject to certain preexisting rights held by the licensor or certain third parties. As a result, we may not be able to prevent competitors from developing and commercializing competitive products in certain territories or fields. For example, certain licensed patents developed by employees of the Howard Hughes Medical Institute, or HHMI, and subsequently assigned to Harvard and licensed to us under the Harvard License Agreement remain subject to a non-exclusive license between Harvard and HHMI. The Editas License Agreement provides that our field of use excludes the treatment and prevention of ocular disease and diagnosis, treatment, and prevention of human cancers through engineered T-cells, which are licensed to other licensees, including Allergan Pharmaceuticals International Limited and Juno Therapeutics, Inc. If we determine that rights to such excluded fields are necessary to commercialize our product candidates or maintain our competitive advantage, we may need to obtain a license from such third party in order to continue developing, manufacturing or marketing our product candidates. We may not be able to obtain such a license on an exclusive basis, on commercially reasonable terms, or at all, which could prevent us from commercializing our product candidates or allow our competitors or others the chance to access technology that is important to our business.

Under the Broad License Agreement, rights granted to us include certain patent applications directed to Cas12b or Cas13 that are limited to the United States. The co-owners of these patent applications include the State University of New Jersey, or Rutgers, Skolkovo Institute of Science and Technology, or Skoltech, and the NIH. At present, we do not have a license to the ownership interest of Rutgers, Skoltech, or the NIH. If we are unable to obtain an exclusive license to Rutgers, Skoltech, and the NIH's interest in such patent applications, Rutgers, Skoltech, and the NIH may be able to license its rights to other third parties, including our competitors, and such third parties could market competing products and technology. In addition, we may need the cooperation of Rutgers, Skoltech, or the NIH in order to enforce patents issuing from these patent applications against third parties, and such cooperation may not be provided to us. Any of the foregoing could have a material adverse effect on our competitive position, business, financial conditions, results of operations, and prospects.

In addition, pursuant to our license agreement with the Broad and our license agreement with Harvard, under certain specific circumstances (in each case), the Broad or Harvard (as applicable) may grant a license to the patents that are the subject of such license agreement to a third party. Such third party may then have full rights that are the subject of the Broad License Agreement or the Harvard License Agreement (as applicable), which could impact our competitive position and enable a third party to commercialize products similar to our potential future product candidates and technology. Any grant of rights to a third party in this scenario would narrow the scope of our exclusive rights to the patents and patent applications we have in-licensed from the Broad and/or Harvard, as applicable. For more information regarding our license agreements, see "Business—License Agreements".

We do not have complete control in the preparation, filing, prosecution, maintenance, enforcement, and defense of patents and patent applications covering the technology that we license from third parties. For example, pursuant to each of our intellectual property licenses with the Broad, Harvard, Editas and Bio Palette, our licensors retain control of preparation, filing, prosecution, and maintenance, and, in certain circumstances, enforcement and defense of their patents and patent applications. It is possible that our licensors' enforcement of patents against infringers or defense of such patents against challenges of validity or claims of enforceability may be less vigorous than if we had conducted them ourselves, or may not be conducted in accordance with our best interests. We cannot be certain that these patents and patent applications will be prepared, filed, prosecuted, maintained, enforced, and defended in a manner consistent with the best interests of our business. If our licensors fail to prosecute, maintain, enforce, and defend such patents, or lose rights to those patents or patent applications, the rights we have licensed may be reduced or eliminated, our right to develop and commercialize any of our product candidates we may develop that are the subject of such licensed rights could be adversely affected and we may not be able to prevent competitors from making, using, and selling competing products.

Our licensors may have relied on third-party consultants or collaborators or on funds from third parties such that our licensors are not the sole and exclusive owners of the patents we in-licensed. If other third parties have ownership rights to our in-licensed patents, they may be able to license such patents to our competitors, and our competitors could market competing products and technology. In addition, our rights to our in-licensed patents and patent applications are dependent, in part, on inter-institutional or other operating agreements between the joint owners of such in-licensed patents and patent applications. If one or more of such joint owners breaches such inter-institutional or operating agreements, our rights to such in-licensed patents and patent applications may be adversely affected. Any of these events could have a material adverse effect on our competitive position, business, financial conditions, results of operations, and prospects.

Furthermore, inventions contained within some of our in-licensed patents and patent applications were made using U.S. government funding. We rely on our licensors to ensure compliance with applicable obligations arising from such funding, such as timely reporting, an obligation associated with our in-licensed patents and patent applications. The failure of our licensors to meet their obligations may lead to a loss of rights or the

unenforceability of relevant patents. For example, the U.S. government could have certain rights in such in-licensed patents, including a non-exclusive license authorizing the U.S. government to use the invention or to have others use the invention on its behalf. If the U.S. government decides to exercise these rights, it is not required to engage us as its contractor in connection with doing so. The U.S. government's rights may also permit it to disclose the funded inventions and technology to third parties and to exercise march-in rights to use or allow third parties to use the technology we have licensed that was developed using U.S. government funding. The U.S. government may also exercise its march-in rights if it determines that action is necessary because we or our licensors failed to achieve practical application of the U.S. government-funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations, or to give preference to U.S. industry. In addition, our rights in such in-licensed U.S. government-funded inventions may be subject to certain requirements to manufacture product candidates embodying such inventions in the United States. Any of the foregoing could harm our business, financial condition, results of operations, and prospects significantly.

In the event any of our third-party licensors determine that, in spite of our efforts, we have materially breached a license agreement or have failed to meet certain obligations thereunder, it may elect to terminate the applicable license agreement or, in some cases, one or more license(s) under the applicable license agreement and such termination would result in us no longer having the ability to develop and commercialize product candidates and technology covered by that license agreement or license. In the event of such termination of a third-party in-license, or if the underlying patents under a third-party in-license fail to provide the intended exclusivity, competitors would have the freedom to seek regulatory approval of, and to market, products identical to ours. Any of these events could have a material adverse effect on our competitive position, business, financial conditions, results of operations, and prospects.

Our owned and in-licensed patents and patent applications may not provide sufficient protection of our base editing platform technologies, our product candidates and our future product candidates or result in any competitive advantage.

We have in-licensed a number of issued U.S. patents and patent applications that cover base editing and gene targeting technologies. As of the date of this prospectus, we have applied for provisional patent applications intended to specifically cover our base editing platform technology and uses with respect to treatment of particular diseases and conditions, but do not currently own any issued U.S. patents. Each U.S. provisional patent application is not eligible to become an issued patent until, among other things, we file a non-provisional patent application within 12 months of the filing date of the applicable provisional patent application. Any failure to file a non-provisional patent application within this timeline could cause us to lose the ability to obtain patent protection for the intentions disclosed in the associated provisional patent applications. We cannot be certain that any of these patent applications will issue as patents, and if they do, that such patents will cover or adequately protect our base editing platform technologies or our product candidates, or that such patents will not be challenged, narrowed, circumvented, invalidated or held unenforceable. Any failure to obtain or maintain patent protection with respect to our base editing platform technology and product candidates could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

Our owned patent applications and in-licensed patents and patent applications contain claims directed to compositions of matter on our gene therapy product candidates, as well as methods directed to the use of such product candidates for gene therapy treatment. Method-of-use patents do not prevent a competitor or other third party from developing or marketing an identical product for an indication that is outside the scope of the patented method. Moreover, with respect to method-of-use patents, even if competitors or other third parties do not actively promote their product for our targeted indications or uses for which we may obtain patents, providers may recommend that patients use these products off-label, or patients may do so themselves.

The strength of patents in the biotechnology and pharmaceutical field involves complex legal and scientific questions and can be uncertain. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries. For example, while our patent applications are pending, we may be subject to a third party pre-issuance submission of prior art to the United States Patent and Trademark Office, or USPTO, or become involved in interference or derivation proceedings, or equivalent proceedings in foreign jurisdictions. Even if patents do successfully issue, third parties may challenge their inventorship, validity, enforceability or scope, including through opposition, revocation, reexamination, post-grant and *inter partes* review proceedings. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate or render unenforceable, our owned or in-licensed patent rights, allow third parties to commercialize our technology or product candidates and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights. Moreover, we, or one of our licensors, may have to participate in interference proceedings declared by the USPTO to determine priority of invention or in post-grant challenge proceedings, such as oppositions in a foreign patent office, that challenge our or our licensor's priority of invention or other features of patentability with respect to our owned or in-licensed patents and patent applications. Such challenges may result in loss of patent rights, loss of exclusivity, or in patent claims being narrowed, invalidated, or held unenforceable, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and product candidates. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property or prevent others from designing around our claims. If the breadth or strength of protection provided by the patent applications we own or the patents and patent applications we in-license with respect to our base editing platform technology and product candidates is threatened, it could dissuade companies from collaborating with us to develop, and threaten our ability to commercialize, our product candidates. Further, if we encounter delays in development, testing, and regulatory review of new product candidates, the period of time during which we could market our product candidates under patent protection would be reduced.

Given that patent applications in the United States and other countries are confidential for a period of time after filing, at any moment in time, we cannot be certain that we or our licensors were in the past or will be in the future the first to file any patent application related to our base editing technology or product candidates. In addition, some patent applications in the United States may be maintained in secrecy until the patents are issued. As a result, there may be prior art of which we or our licensors are not aware that may affect the validity or enforceability of a patent claim, and we or our licensors may be subject to priority disputes. For our in-licensed patent portfolios, we rely on our licensors to determine inventorship, and obtain and file inventor assignments of priority applications before their conversion as Patent Cooperation Treaty, or PCT, applications. A failure to do so in a timely fashion may give rise to a challenge to entitlement of priority for foreign applications nationalized from such PCT applications, for example, the Opposition Division has revoked the Broad patent European Patent No. EP2771468 following a third party challenge to its priority rights, and the applicable opposition proceeding is currently under appeal. The patent was revoked due to loss of priority and appeal is pending. We or our licensors are subject to and may in the future become a party to proceedings or priority disputes in Europe or other foreign jurisdictions. The loss of priority for, or the loss of, these European patents could have a material adverse effect on the conduct of our business.

We may be required to disclaim part or all of the term of certain patents or patent applications. There may be prior art of which we are not aware that may affect the validity or enforceability of a patent claim. There also may be prior art of which we or our licensors are aware, but which we or our licensors do not believe affects the validity or enforceability of a claim, which may, nonetheless, ultimately be found to affect the validity or enforceability of a claim. No assurance can be given that, if challenged, our patents would be declared by a court, patent office or other governmental authority to be valid or enforceable or that even if found valid and

enforceable, a competitor's technology or product would be found by a court to infringe our patents. We may analyze patents or patent applications of our competitors that we believe are relevant to our activities, and consider that we are free to operate in relation to our product candidates, but our competitors may achieve issued claims, including in patents we consider to be unrelated, that block our efforts or potentially result in our product candidates or our activities infringing such claims. It is possible that our competitors may have filed, and may in the future file, patent applications covering our products or technology similar to ours. Those patent applications may have priority over our owned patent applications and in-licensed patent applications or patents, which could require us to obtain rights to issued patents covering such technologies. The possibility also exists that others will develop products that have the same effect as our product candidates on an independent basis that do not infringe our patents or other intellectual property rights, or will design around the claims of our patent applications or our in-licensed patents or patent applications that cover our product candidates.

Likewise, our currently owned patent applications, if issued as patents, and in-licensed patents and patent applications, if issued as patents, directed to our proprietary base editing technologies and our product candidates are expected to expire from 2034 through 2040, without taking into account any possible patent term adjustments or extensions. Our owned or in-licensed patents may expire before, or soon after, our first product candidate achieves marketing approval in the United States or foreign jurisdictions. Additionally, no assurance can be given that the USPTO or relevant foreign patent offices will grant any of the pending patent applications we own or in-license currently or in the future. Upon the expiration of our current in-licensed patents, we may lose the right to exclude others from practicing these inventions. The expiration of these patents could also have a similar material adverse effect on our business, financial condition, results of operations and prospects.

Our owned patent applications and in-licensed patents and patent applications and other intellectual property may be subject to priority disputes or to inventorship disputes and similar proceedings. If we or our licensors are unsuccessful in any of these proceedings, we may be required to obtain licenses from third parties, which may not be available on commercially reasonable terms or at all, or to cease the development, manufacture, and commercialization of one or more of the product candidates we may develop, which could have a material adverse impact on our business.

Although we have an option to exclusively license certain patents and patent applications directed to Cas9 and Cas12a from Editas, who in turn has licensed such patents from various academic institutions including the Broad, we do not currently have a license to such patents and patent applications. Certain of the U.S. patents and one U.S. patent application to which we hold an option are co-owned by the Broad and MIT, and in some cases co-owned by the Broad, MIT, and Harvard, which we refer to together as the Boston Licensing Parties, and were involved in U.S. interference No. 106,048 with one U.S. patent application co-owned by the University of California, the University of Vienna, and Emmanuelle Charpentier, which we refer to together as the University of California. On September 10, 2018, the Court of Appeals for the Federal Circuit, or the CAFC, affirmed the Patent Trial and Appeal Board of the USPTO's, or PTAB's, holding that there was no interference-in-fact. An interference is a proceeding within the USPTO to determine priority of invention of the subject matter of patent claims filed by different parties.

On June 24, 2019, the PTAB declared an interference (U.S. Interference No. 106,115) between 10 U.S. patent applications ((U.S. Serial Nos. 15/947,680; 15/947,700; 15/947,718; 15/981,807; 15/981,808; 15/981,809; 16/136,159; 16/136,165; 16/136,168; and 16/136,175) that are co-owned by the University of California and 13 U.S. patents and one U.S. patent application ((U.S. Patent Nos. 8,697,359; 8,771,945; 8,795,965; 8,865,406; 8,871,445; 8,889,356; 8,895,308; 8,906,616; 8,932,814; 8,945,839; 8,993,233; 8,999,641; and 9,840,713, and U.S. Serial No. 14/704,551) that are co-owned by the Boston Licensing Parties, which we have an option to

under the Editas License Agreement. In the declared interference, the University of California has been designated as the junior party and the Boston Licensing Parties have been designated as the senior party.

As a result of the declaration of interference, an adversarial proceeding in the USPTO before the PTAB has been initiated, which is declared to ultimately determine priority, specifically and which party was first to invent the claimed subject matter. An interference is typically divided into two phases. The first phase is referred to as the motions or preliminary motions phase while the second is referred to as the priority phase. In the first phase, each party may raise issues including but not limited to those relating to the patentability of a party's claims based on prior art, written description, and enablement. A party also may seek an earlier priority benefit or may challenge whether the declaration of interference was proper in the first place. Priority, or a determination of who first invented the commonly claimed invention, is determined in the second phase of an interference. Although we cannot predict with any certainty how long each phase will actually take, each phase may take approximately a year or longer before a decision is made by the PTAB. It is possible for motions filed in the preliminary motions phase to be dispositive of the interference proceeding, such that the second priority phase is not reached. The 10 University of California patent applications and the 13 U.S. patents and one U.S. patent application co-owned by the Boston Licensing Parties involved in U.S. Interference No. 106,115 generally relate to CRISPR/Cas9 systems or eukaryotic cells comprising CRISPR/Cas9 systems having fused or covalently linked RNA and the use thereof in eukaryotic cells. There can be no assurance that the U.S. interference will be resolved in favor of the Boston Licensing Parties. If the U.S. interference resolves in favor of University of California, or if the Boston Licensing Parties' patents and patent application are narrowed, invalidated, or held unenforceable, we will lose the ability to license the optioned patents and patent application and our ability to commercialize our product candidates may be adversely affected if we cannot obtain a license to relevant third party patents that cover our product candidates. We may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be nonexclusive, thereby giving our competitors and other third parties access to the same technologies licensed to us, and it could require us to make substantial licensing and royalty payments. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, we may be unable to commercialize our base editing platform technology or product candidates or such commercialization efforts may be significantly delayed, which could in turn significantly harm our business.

We or our licensors may also be subject to claims that former employees, collaborators, or other third parties have an interest in our owned patent applications or in-licensed patents or patent applications or other intellectual property as an inventor or co-inventor. If we are unable to obtain an exclusive license to any such third party co-owners' interest in such patent applications, such co-owners may be able to license their rights to other third parties, including our competitors. In addition, we may need the cooperation of any such co-owners to enforce any patents that issue from such patent applications against third parties, and such cooperation may not be provided to us.

If we or our licensors are unsuccessful in any interference proceedings or other priority or validity disputes (including any patent oppositions) to which we or they are subject, we may lose valuable intellectual property rights through the loss of one or more of our owned, licensed, or optioned patents, or such patent claims may be narrowed, invalidated, or held unenforceable. In addition, if we or our licensors are unsuccessful in any inventorship disputes to which we or they are subject, we may lose valuable intellectual property rights, such as exclusive ownership of, or the exclusive right to use, our owned or in-licensed patents. If we or our licensors are unsuccessful in any interference proceeding or other priority or inventorship dispute, we may be required to obtain and maintain licenses from third parties, including parties involved in any such interference proceedings or other priority or inventorship disputes. Such licenses may not be available on commercially reasonable terms or at all, or may be non-exclusive. If we are unable to obtain and maintain such licenses, we may need to cease the development, manufacture, and commercialization of one or more of the product candidates we may

develop. The loss of exclusivity or the narrowing of our patent claims could limit our ability to stop others from using or commercializing similar or identical technology and product candidates. Even if we or our licensors are successful in an interference proceeding or other similar priority or inventorship disputes, it could result in substantial costs and be a distraction to management and other employees. Any of the foregoing could result in a material adverse effect on our business, financial condition, results of operations, or prospects.

We have limited foreign intellectual property rights and may not be able to protect our intellectual property and proprietary rights throughout the world.

We have limited intellectual property rights outside the United States. Filing, prosecuting, and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of foreign countries do not protect intellectual property rights to the same extent as federal and state laws of the United States. In addition, our intellectual property license agreements may not always include worldwide rights. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection but where enforcement is not as strong as that in the United States. These products may compete with our product candidates and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets, and other intellectual property protection, particularly those relating to biotechnology and pharmaceutical products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products against third parties in violation of our intellectual property and proprietary rights generally. Proceedings to enforce our patents and intellectual property rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing, and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. Moreover, the initiation of proceedings by third parties to challenge the scope or validity of our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business. Accordingly, our efforts to enforce our intellectual property and proprietary rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If we or any of our licensors is forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position may be impaired, and our business, financial condition, results of operations, and prospects may be adversely affected.

If we fail to comply with our obligations in the agreements under which we license intellectual property rights from third parties or otherwise experience disruptions to our business relationships with our licensors, we could lose license rights that are important to our business.

We have entered into license agreements with third parties and may need to obtain additional licenses from our existing licensors and others to advance our research or allow commercialization of product candidates we may

develop. It is possible that we may be unable to obtain any additional licenses at a reasonable cost or on reasonable terms, if at all. In either event, we may be required to expend significant time and resources to redesign our technology, product candidates, or the methods for manufacturing them or to develop or license replacement technology, all of which may not be feasible on a technical or commercial basis. If we are unable to do so, we may be unable to develop or commercialize the affected product candidates, which could harm our business, financial condition, results of operations, and prospects significantly. We cannot provide any assurances that third-party patents do not exist which might be enforced against our current technology, including base editing technology, manufacturing methods, product candidates, or future methods or products resulting in either an injunction prohibiting our manufacture or future sales, or, with respect to our future sales, an obligation on our part to pay royalties and/or other forms of compensation to third parties, which could be significant.

In each of our license agreements, we are generally responsible for bringing any actions against any third party for infringing on the patents we have licensed. Certain of our license agreements, also require us to meet development thresholds to maintain the license, including establishing a set timeline for developing and commercializing products. In spite of our efforts, our licensors might conclude that we have materially breached our obligations under such license agreements and might therefore terminate the license agreements, thereby removing or limiting our ability to develop and commercialize products and technology covered by these license agreements. If these in-licenses are terminated, or if the underlying patents fail to provide the intended exclusivity, competitors or other third parties would have the freedom to seek regulatory approval of, and to market, products identical to ours and we may be required to cease our development and commercialization of or base editing platform technology or product candidates. Any of the foregoing could have a material adverse effect on our competitive position, business, financial conditions, results of operations, and growth prospects. Disputes may arise regarding intellectual property subject to a licensing agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights to third parties under our collaborative development relationships;
- our diligence obligations under the license agreement with respect to the use of the licensed technology in relation to our development and commercialization of our product candidates and what activities satisfy those diligence obligations;
- the inventorship and ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and
- the priority of invention of patented technology.

In addition, the agreements under which we currently license intellectual property or technology from third parties are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations, and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize

the affected product candidates. As a result, any termination of or disputes over our intellectual property licenses could result in the loss of our ability to develop and commercialize our base editing platform or other product candidates or we could lose other significant rights, any of which could have a material adverse effect on our business, financial conditions, results of operations, and prospects. It is also possible that a third party could be granted limited licenses to some of the same technology, in certain circumstances. For more information, see the Business Section.

We may not be successful in acquiring or in-licensing necessary rights to key technologies or any product candidates we may develop.

We currently have rights to intellectual property, through licenses from third parties, to identify and develop product candidates and seek to expand our product candidate pipeline in part by in-licensing the rights to key technologies. The future growth of our business will depend in part on our ability to in-license or otherwise acquire the rights to additional product candidates and technologies. Although we have succeeded in licensing technologies from third party licensees including Harvard, the Broad, Editas, and Bio Palette in the past, we cannot assure you that we will be able to in-license or acquire the rights to any product candidates or technologies from third parties on acceptable terms or at all.

For example, our agreements with certain of our third-party licensors provide that our filed of use excludes particular fields, for example, treatment and prevention of ocular disease, and diagnosis, treatment, and prevention of human cancers through engineered T-cells, which are licensed exclusively or non-exclusively to other third-party licensees. If we determine that rights to such fields are necessary to commercialize our drug candidates or maintain our competitive advantage, we may need to obtain a license from such third party in order to continue developing, manufacturing or marketing our drug candidates. We may not be able to obtain such a license on an exclusive basis, on commercially reasonable terms, or at all, which could prevent us from commercializing our drug candidates or allow our competitors or others the chance to access technology that is important to our business. For more information regarding these agreements, please see “Business—License Agreements.”

Furthermore, there has been extensive patenting activity in the field of genome editing, and pharmaceutical companies, biotechnology companies, and academic institutions are competing with us or are expected to compete with us in the in the field of genome editing technology and filing patent applications potentially relevant to our business and we are aware of certain third-party patent applications that, if issued, may allow the third party to circumvent our patent rights. For example, we are aware of several third-party patents, and patent applications, that if issued, may be construed to cover our base editing technology and product candidates. In order to market our product candidates, we may find it necessary or prudent to obtain licenses from such third party intellectual property holders. However, we may be unable to secure such licenses or otherwise acquire or in-license any compositions, methods of use, processes, or other intellectual property rights from third parties that we identify as necessary for product candidates we may develop and base editing technology. We may also require licenses from third parties for certain non-base editing technologies including certain delivery methods that we are evaluating for use with product candidates we may develop. In addition, some of our owned patent applications and in-licensed patents and patent applications are co-owned with third parties. With respect to any patents co-owned with third parties, we may require licenses to such co-owners’ interest to such patents. If we are unable to obtain an exclusive license to any such third-party co-owners’ interest in such patents or patent applications, such co-owners may be able to license their rights to other third parties, including our competitors, and our competitors could market competing products and technology. In addition, we may need the cooperation of any such co-owners of our patents in order to enforce such patents against third parties, and such cooperation may not be provided to us.

Additionally, we may collaborate with academic institutions to accelerate our preclinical research or development under written agreements with these institutions. In certain cases, these institutions provide us with an option to negotiate a license to any of the institution's rights in technology resulting from the collaboration. Even if we hold such an option, we may be unable to negotiate a license from the institution within the specified timeframe or under terms that are acceptable to us. If we are unable to do so, the institution may offer the intellectual property rights to others, potentially blocking our ability to pursue our program.

In addition, the licensing or acquisition of third party intellectual property rights is a highly competitive area, and a number of more established companies are also pursuing strategies to license or acquire third party intellectual property rights that we may consider attractive or necessary. These established companies may have a competitive advantage over us due to their size, capital resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third party intellectual property rights on terms that would allow us to make an appropriate return on our investment or at all. If we are unable to successfully obtain rights to required third party intellectual property rights or maintain the existing intellectual property rights we have, we may have to abandon development of the relevant program or product candidate, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

The intellectual property landscape around genome editing technology, including base editing, is highly dynamic, and third parties may initiate legal proceedings alleging that we are infringing, misappropriating, or otherwise violating their intellectual property rights, the outcome of which would be uncertain and may prevent, delay or otherwise interfere with our product discovery and development efforts.

The field of genome editing, especially in the area of base editing technology, is still in its infancy, and no such product candidates have reached the market. Due to the intense research and development that is taking place by several companies, including us and our competitors, in this field, the intellectual property landscape is evolving and in flux, and it may remain uncertain for the coming years. There may be significant intellectual property related litigation and proceedings relating to our owned and in-licensed, and other third party, intellectual property and proprietary rights in the future.

Our commercial success depends upon our ability and the ability of our collaborators and licensors to develop, manufacture, market, and sell any product candidates that we may develop and use our proprietary technologies without infringing, misappropriating, or otherwise violating the intellectual property and proprietary rights of third parties. The biotechnology and pharmaceutical industries are characterized by extensive litigation regarding patents and other intellectual property rights as well as administrative proceedings for challenging patents, including interference, derivation, *inter partes* review, post grant review, and reexamination proceedings before the USPTO or oppositions and other comparable proceedings in foreign jurisdictions. We may be subject to and may in the future become party to, or threatened with, adversarial proceedings or litigation regarding intellectual property rights with respect to our base editing platform technology and any product candidates we may develop, including interference proceedings, post-grant review, *inter partes* review, and derivation proceedings before the USPTO and similar proceedings in foreign jurisdictions such as oppositions before the EPO. Numerous U.S. and foreign issued patents and pending patent applications that are owned by third parties exist in the fields in which we are developing our product candidates and they may assert infringement claims against us based on existing patents or patents that may be granted in the future, regardless of their merit.

As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our base editing platform technology and product candidates may give rise to claims of infringement of the

patent rights of others. Moreover, it is not always clear to industry participants, including us, which patents cover various types of therapies, products or their methods of use or manufacture. We are aware of certain third-party patent applications that, if issued, may be construed to cover our base editing technology and product candidates. There may also be third-party patents of which we are currently unaware with claims to technologies, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, there may be currently pending patent applications that may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents.

Numerous third-party U.S. and foreign issued patents and pending patent applications exist in the fields in which we are developing product candidates. Our product candidates make use of CRISPR-based technology, which is a field that is highly active for patent filings. In November 2018, it was reported that 211 patent families and 1835 patent family members worldwide referenced CRISPR or Cas in the title, abstracts or claims. The extensive patent filings related to CRISPR and Cas make it difficult for us to assess the full extent of relevant patents and pending applications that may cover our base editing platform technology and product candidates and their use or manufacture. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our base editing platform technology and product candidates. For example, we are aware of a patent portfolio that is co-owned by the University of California, University of Vienna and Emmanuelle Charpentier, or the University of California Portfolio, which contains multiple patents and pending applications directed to gene editing. The University of California portfolio includes, for example, U.S. Patent Nos. 10,266,850; 10,227,611; 10,000,772; 10,113,167; 10,301,651; 10,308,961; 10,337,029; and 10,351,878; which are expected to expire around March 2033, excluding any additional term for patent term adjustment, or PTA, or patent term extension, or PTE, and any disclaimed term for terminal disclaimers. The University of California portfolio also includes U.S. pre-grant patent publications 20170166893, 20190106712, 20190093129, 20180208931, 20190169641, 20180312874, and 20180312875, which are indicated as in condition for allowance by the USPTO, as well as numerous additional pending patent applications. If these patent applications issue as patents, they are expected to expire around March 2033, excluding any PTA, PTE, and any disclaimed term for terminal disclaimers. As discussed above, certain applications in the University of California Portfolio are currently subject to U.S. Interference No. 106,115 with certain U.S. patents and one U.S. patent application that are co-owned by the Boston Licensing Parties to which we have an option under the Editas License Agreement. Although we have an option to exclusively license certain patents and patent applications directed to Cas9 and Cas12a from Editas, who in turn has licensed such patents from various academic institutions including the Broad, we do not currently have a license to such patents and patent applications. Certain members of the University of California Portfolio are being opposed in Europe by multiple parties. For example, the European Patent Office Opposition Division (the “Opposition Division”) has initiated opposition proceedings against European patents, European Patent Nos. EP3,241,902 B1 and EP2,800,811 B1, which are estimated to expire in March 2033 (excluding any patent term adjustments or extensions). In addition, a notice of opposition has also been filed against European patent, European Patent No. EP3,401,400 B1, which is estimated to expire in March 2033 (excluding any patent term adjustments or extensions). The opposition procedure before the European Patent Office allows one or more third parties to challenge the validity of a granted European patent with nine months after grant date of the European patent. Opposition proceedings may involve issues including, but not limited to, priority, patentability of the claims involved, and procedural formalities related to the filing of the patent application. As a result of the opposition proceedings, the Opposition Division can revoke a patent, maintain the patent as granted, or maintain the patent in an amended form. It is uncertain when or in what manner the Opposition Division will act on the opposition proceedings of European patents EP3,241,902 B1 and EP2,800,811 B1 and how oppositions filed against EP3,401,400 B1 will be resolved. If these patents are maintained by the Opposition Division with

claims similar to those that are currently opposed, our ability to commercialize our product candidates may be adversely affected if we do not obtain a license to these patents. We may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be nonexclusive, thereby giving our competitors and other third parties access to the same technologies licensed to us, and it could require us to make substantial licensing and royalty payments. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, we may be unable to commercialize our base editing platform technology or product candidates or such commercialization efforts may be significantly delayed, which could in turn significantly harm our business.

Numerous other patents and patent applications have been filed by other third parties directed to gene editing, guide nucleic acids, PAM sequence variants, split inteins, Cas12b or gene editing in the context of immune therapy. For example, we are aware of patents that are issued to: Sigma-Aldrich Co., including European Patent No. EP2928496, estimated to expire around December 2033; Novartis AG, or Novartis, and J. Craig Venter Institute, including U.S. Patent Nos. US9738693 and US9840538, both estimated to expire around October 2021; Vilnius University, including U.S. Patent No. US9637739 and European Patent EP2828386, both estimated to expire around March 2033; Agilent Technologies, Inc., or Agilent, including U.S. Patent No. US10337001, estimated to expire around December 2035; Cellectis, including U.S. Patent Nos. US9890393 and US9855297, both estimated to expire around April 2034, and European Patent No. EP3004337, estimated to expire around April 2034; Sangamo Therapeutics, Inc., including U.S. Patent No. US9970001, estimated to expire around June 2035; The Trustees of Princeton University, including European Patent No. EP2877490, estimated to expire around June 2033; Miltenyi Biotec GmbH, including European Patent No. EP3025719, estimated to expire around November 2035; Amgen Research (Munich) GmbH, including European Patent No. EP2155783, estimated to expire around April 2028. The estimated expiration dates do not include any PTA or PTE that may be granted to these patents. In many cases, these and other third parties have pending patent applications that may be relevant to our programs or product candidates. Because of the large number of patents issued and patent applications filed in our field, third parties may allege they have patent rights encompassing our product candidates, technologies or methods. Third parties may assert that we are employing their proprietary technology without authorization and may file patent infringement claims or lawsuit against us, and if we are found to infringe such third-party patents, we may be required to pay damages, cease commercialization of the infringing technology, or obtain a license from such third parties, which may not be available on commercially reasonable terms or at all.

Our ability to commercialize our product candidates in the United States and abroad may be adversely affected if we cannot obtain a license on commercially reasonable terms to relevant third party patents that cover our product candidates or base editing platform technology. Even if we believe third-party intellectual property claims are without merit, there is no assurance that a court would find in our favor on questions of infringement, validity, enforceability, or priority. A court of competent jurisdiction could hold that these third-party patents are valid, enforceable, and infringed, which could materially and adversely affect our ability to commercialize any product candidates we may develop and any other product candidates or technologies covered by the asserted third party patents. In order to successfully challenge the validity of any such U.S. patent in federal court, we would need to overcome a presumption of validity. As this burden is a high one requiring us to present clear and convincing evidence as to the invalidity of any such U.S. patent claim, there is no assurance that a court of competent jurisdiction would invalidate the claims of any such U.S. patent. If we are found to infringe a third party's intellectual property rights, and we are unsuccessful in demonstrating that such patents are invalid or unenforceable, we could be required to obtain a license from such third party to continue developing, manufacturing, and marketing any product candidates we may develop and our technology. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors and other third parties access to the same technologies licensed to us, and it could require us to make substantial

licensing and royalty payments. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, we may be unable to commercialize our base editing platform technology or product candidates or such commercialization efforts may be significantly delayed, which could in turn significantly harm our business. We also could be forced, including by court order, to cease developing, manufacturing, and commercializing the infringing technology or product candidates. In addition, we could be found liable for significant monetary damages, including treble damages and attorneys' fees, if we are found to have willfully infringed a patent or other intellectual property right. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar material adverse effect on our business, financial condition, results of operations, and prospects.

Defense of third-party claims of infringement of misappropriation, or violation of intellectual property rights involves substantial litigation expense and would be a substantial diversion of management and employee time and resources from our business. Some third-parties may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations or could otherwise have a material adverse effect on our business, financial condition, results of operations and prospects. There could also be public announcements of the results of hearings, motions, or other interim proceedings or developments, and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Any of the foregoing events could have a material adverse effect on our business, financial condition, results of operations and prospects.

We may become involved in lawsuits to protect or enforce our future patents or the patents of our licensors, which could be expensive, time consuming, and unsuccessful and could result in a finding that such patents are unenforceable or invalid.

Competitors may infringe our future patents or the patents of our licensing partners, or we may be required to defend against claims of infringement. In addition, our future patents or the patents of our licensing partners also are, and may in the future become, involved in inventorship, priority, validity or enforceability disputes. Countering or defending against such claims can be expensive and time consuming. In an infringement proceeding, a court may decide that a patent owned or in-licensed by us is invalid or unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our owned and in-licensed patents do not cover the technology in question. An adverse result in any litigation proceeding could put one or more of our owned or in-licensed patents at risk of being invalidated or interpreted narrowly.

In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace, and there are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. These types of mechanisms include re-examination, post-grant review, *inter partes* review, interference proceedings, derivation proceedings, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). These types of proceedings could result in revocation or amendment to our patents such that they no longer cover our product candidates. The outcome for any particular patent following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we, our licensors, our patent counsel and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, or if we are otherwise unable to adequately protect our rights, we would lose at least part, and perhaps all, of the patent protection on our technology and/or product candidates. Defense of these types of claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business.

Conversely, we may choose to challenge the patentability of claims in a third party's U.S. patent by requesting that the USPTO review the patent claims in re-examination, post-grant review, *inter partes* review, interference proceedings, derivation proceedings, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). We are currently challenging, and in the future may choose to challenge, third party patents in patent opposition proceedings in the EPO or another foreign patent office. Even if successful, the costs of these opposition proceedings could be substantial, and may consume our time or other resources. If we fail to obtain a favorable result at the USPTO, EPO or other patent office then we may be exposed to litigation by a third party alleging that the patent may be infringed by our product candidates, base editing platform technology or other or proprietary technologies.

For example, as discussed above, elements of the University of California patent portfolio are being opposed in Europe by multiple parties and we are participating in the opposition proceedings. The EPO Opposition Division, or the Opposition Division, has initiated opposition proceedings against European patents estimated to expire in March 2033 (excluding any patent term adjustments or extensions) and co-owned by the University of California. The opposition procedure before the EPO allows one or more third parties to challenge the validity of a granted European patent within nine months after grant date of the European patent. Opposition proceedings may involve issues including, but not limited to, priority, patentability of the claims involved, and procedural formalities related to the filing of the patent application. As a result of the opposition proceedings, the Opposition Division can revoke a patent, maintain the patent as granted, or maintain the patent in an amended form. It is uncertain when or in what manner the Opposition Division will act on the opposition proceedings of these European patents. If these patents are maintained by the Opposition Division with claims similar to those that are currently opposed, our ability to commercialize our product candidates may be adversely affected if we do not obtain a license to these patents. We may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be nonexclusive, thereby giving our competitors and other third parties access to the same technologies licensed to us, and it could require us to make substantial licensing and royalty payments. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, we may be unable to commercialize our base editing platform technology or product candidates or such commercialization efforts may be significantly delayed, which could in turn significantly harm our business.

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses and could distract our personnel from their normal responsibilities. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions, or other interim proceedings or developments, and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing, or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment, and other requirements imposed by government patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees, and various other government fees on patents and applications are due to be paid to the USPTO and foreign patent agencies outside of the United States over the lifetime of our owned or licensed patents and applications. In certain circumstances, we rely on our licensing partners to pay these fees due to U.S. and non-U.S. patent agencies. The USPTO and foreign patent agencies require compliance with several procedural, documentary, fee payment, and other similar provisions during the patent application process. We are also dependent on our licensors to take the necessary action to comply with these requirements with respect to our licensed intellectual property. While an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations, however, in which non-compliance can result a partial or complete loss of patent rights in the relevant jurisdiction. Were a noncompliance event to occur, our competitors might be able to enter the market with similar or identical products or technology, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Changes in patent law in the United States and in non-U.S. jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our base editing platform technology and product candidates.

As is the case with other biotech and pharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involve both technological and legal complexity, and is therefore costly, time-consuming and inherently uncertain.

Changes in either the patent laws or interpretation of the patent laws could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of our issued patents. For example, in March 2013, under the Leahy-Smith America Invents Act, or the America Invents Act, the United States transitioned from a “first to invent” to a “first-to-file” patent system. Under a “first-to-file” system, assuming that other requirements for patentability are met, the first inventor to file a patent application generally will be entitled to a patent on an invention regardless of whether another inventor had made the invention earlier. A third party that files a patent application in the USPTO after March 2013, but before us could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by such third party. This will require us to be cognizant going forward of the time from invention to filing of a patent application. Since patent applications in the United States and most other countries are confidential for a period of time after filing or until issuance, we cannot be certain that we or our licensors were the first to either file any patent application related to our technology or product candidates or invent any of the inventions claimed in our or our licensor’s patents or patent applications. The America Invents Act also includes a number of other significant changes to U.S. patent law, including provisions that affect the way patent applications will be prosecuted, allowing third party submission of prior art and establish a new post-grant review system including post-grant review, *inter partes* review, and derivation proceedings. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal courts necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. Accordingly, a third party may attempt to use the USPTO procedures to invalidate our patent claims that would not have been invalidated if first challenged by the third party as a defendant in a district court action. The effects of these changes are currently unclear as the USPTO continues to promulgate new regulations and procedures in connection with the America Invents Act and many of the substantive changes to patent law, including the “first-to-file” provisions, only became effective in March 2013. In addition, the courts have yet to address many of these provisions and

the applicability of the act and new regulations on the specific patents discussed in this filing have not been determined and would need to be reviewed. However, the America Invents Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents.

In addition, recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the validity and enforceability of patents, once obtained. Depending on future actions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that could weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future. For example, in the case, *Assoc. for Molecular Pathology v. Myriad Genetics, Inc.,* the U.S. Supreme Court held that certain claims to DNA molecules are not patentable. We cannot predict how this and future decisions by the courts, the U.S. Congress or the USPTO may impact the value of our patents. Any similar adverse changes in the patent laws of other jurisdictions could also have a material adverse effect on our business, financial condition, results of operations and prospects.

Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time.

Patents have a limited lifespan. The terms of individual patents depends upon the legal term for patents in the countries in which they are granted. In most countries, including the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest non-provisional filing date in the applicable country. However, the actual protection afforded by a patent varies from country to country, and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory-related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patent. Various extensions including PTE and PTA, may be available, but the life of a patent, and the protection it affords, is limited. For more information regarding PTA and PTE, please see “Business—Intellectual Property”. Even if patents covering our product candidates are obtained, once the patent life has expired, we may be open to competition from competitive products, including generics. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting our product candidates might expire before or shortly after we or our partners commercialize those candidates. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

If we do not obtain PTE and data exclusivity for any product candidates we may develop, our business may be materially harmed.

Depending upon the timing, duration and specifics of any FDA marketing approval of any product candidates we may develop, one or more of our U.S. patents may be eligible for limited PTE under the Drug Price Competition and Patent Term Restoration Act of 1984, or the Hatch-Waxman Amendments. The Hatch-Waxman Amendments PTE term of up to five years as compensation for patent term lost during the FDA regulatory review process. A PTE cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent per product may be extended and only those claims covering the approved drug, a method for using it, or a method for manufacturing it may be extended. However, even if we were to seek a PTE, it may not be granted because of, for example, the failure to exercise due diligence during the testing phase or regulatory review process, the failure to apply within applicable deadlines, the failure to apply prior to expiration of relevant patents, or any other failure to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain PTE or term of any such extension is less than we request, our competitors may obtain

approval of competing products following our patent expiration, and our business, financial condition, results of operations, and prospects could be materially harmed.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to seeking patents for our technology and product candidates, we also rely on know-how and trade secret protection, as well as confidentiality agreements, non-disclosure agreements and invention assignment agreements with our employees, consultants and third-parties, to protect our confidential and proprietary information, especially where we do not believe patent protection is appropriate or obtainable.

It is our policy to require our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors, and other third parties to execute confidentiality agreements upon the commencement of employment or consulting relationships with us. These agreements provide that all confidential information concerning our business or financial affairs developed by or made known to the individual or entity during the course of the party's relationship with us is to be kept confidential and not disclosed to third parties, except in certain specified circumstances. In the case of employees, the agreements provide that all inventions conceived by the individual, and that are related to our current or planned business or research and development or made during normal working hours, on our premises or using our equipment or proprietary information, are our exclusive property. In the case of consultants and other third parties, the agreements provide that all inventions conceived in connection with the services provided are our exclusive property. However, we cannot guarantee that we have entered into such agreements with each party that may have or have had access to our trade secrets or proprietary technology and processes. Additionally, the assignment of intellectual property rights may not be self-executing, or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property. Any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive, and time-consuming, and the outcome is unpredictable.

In addition to contractual measures, we try to protect the confidential nature of our proprietary information through other appropriate precautions, such as physical and technological security measures. However, trade secrets and know-how can be difficult to protect. These measures may not, for example, in the case of misappropriation of a trade secret by an employee or third party with authorized access, provide adequate protection for our proprietary information. Our security measures may not prevent an employee or consultant from misappropriating our trade secrets and providing them to a competitor, and any recourse we might take against this type of misconduct may not provide an adequate remedy to protect our interests fully. In addition, trade secrets may be independently developed by others in a manner that could prevent us from receiving legal recourse. If any of our confidential or proprietary information, such as our trade secrets, were to be disclosed or misappropriated, or if any of that information was independently developed by a competitor, our competitive position could be harmed.

In addition, some courts inside and outside the United States are sometimes less willing or unwilling to protect trade secrets. If we choose to go to court to stop a third party from using any of our trade secrets, we may incur substantial costs. Even if we are successful, these types of lawsuits may consume our time and other resources. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operations and prospects.

Third Parties may assert that our employees, consultants, or advisors have wrongfully used or disclosed confidential information or misappropriated trade secrets.

As is common in the biotechnology and pharmaceutical industries, we employ individuals that are currently or were previously employed at universities, research institutions or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants, and advisors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or these individuals have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of any such individual's current or former employer. We may then have to pursue litigation to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments, and, if securities analysts or investors perceive these results to be negative, that perception could have a substantial adverse effect on the price of our common stock. This type of litigation or proceeding could substantially increase our operating losses and reduce our resources available for development activities, and we may not have sufficient financial or other resources to adequately conduct this type of litigation or proceedings. For example, some of our competitors may be able to sustain the costs of this type of litigation or proceedings more effectively than we can because of their substantially greater financial resources. In any case, uncertainties resulting from the initiation and continuation of intellectual property litigation or other intellectual property related proceedings could adversely affect our ability to compete in the marketplace.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.

Our registered or unregistered trademarks or trade names may be challenged, infringed, circumvented or declared generic or determined to be infringing on other marks. We may not be able to protect our rights to these trademarks and trade names, which we need to build name recognition among potential partners or customers in our markets of interest. At times, competitors or other third parties may adopt trade names or trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trade name or trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of our registered or unregistered trademarks or trade names. Over the long term, if we are unable to establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively and our business may be adversely affected. Our efforts to enforce or protect our proprietary rights related to trademarks, trade secrets, domain names, copyrights or other intellectual property may be ineffective and could result in substantial costs and diversion of resources and could adversely affect our business, financial condition, results of operations and growth prospects.

Intellectual property rights do not necessarily address all potential threats.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- any product candidates we may develop will eventually become commercially available in generic or biosimilar product forms;

- others may be able to make gene therapy products that are similar to any product candidates we may develop or utilize similar base editing technology but that are not covered by the claims of the patents that we license or may own in the future;
- we, or our license partners or current or future collaborators, might not have been the first to make the inventions covered by the issued patent or pending patent application that we license or may own in the future;
- we, or our license partners or current or future collaborators, might not have been the first to file patent applications covering certain of our or their inventions;
- we, or our license partners or current or future collaborators, may fail to meet our obligations to the U.S. government regarding any in-licensed patents and patent applications funded by U.S. government grants, leading to the loss or unenforceability of patent rights;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our owned or licensed intellectual property rights;
- it is possible that our pending, owned or licensed patent applications or those that we may own in the future will not lead to issued patents;
- it is possible that there are prior public disclosures that could invalidate our owned or in-licensed patents, or parts of our owned or in-licensed patents;
- it is possible that there are unpublished applications or patent applications maintained in secrecy that may later issue with claims covering our product candidates or technology similar to ours;
- it is possible that our owned or in-licensed patents or patent applications omit individual(s) that should be listed as inventor(s) or include individual(s) that should not be listed as inventor(s), which may cause these patents or patents issuing from these patent applications to be held invalid or unenforceable;
- issued patents that we hold rights to may be held invalid, unenforceable, or narrowed in scope, including as a result of legal challenges by our competitors;
- the claims of our owned or in-licensed issued patents or patent applications, if and when issued, may not cover our product candidates;
- the laws of foreign countries may not protect our proprietary rights or the proprietary rights of license partners or current or future collaborators to the same extent as the laws of the United States;
- the inventors of our owned or in-licensed patents or patent applications may become involved with competitors, develop products or processes that design around our patents, or become hostile to us or the patents or patent applications on which they are named as inventors;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we have engaged in scientific collaborations in the past and will continue to do so in the future and our collaborators may develop adjacent or competing products that are outside the scope of our patents;
- we may not develop additional proprietary technologies that are patentable;
- any product candidates we develop may be covered by third parties' patents or other exclusive rights;

- the patents of others may harm our business; or
- we may choose not to file a patent in order to maintain certain trade secrets or know-how, and a third party may subsequently file a patent covering such intellectual property.

Should any of these events occur, they could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Risks related to regulatory and other legal compliance matters

Even if we complete the necessary preclinical studies and clinical trials, the marketing approval process is expensive, time-consuming, and uncertain and may prevent us from obtaining approvals for the commercialization of any product candidates we may develop. If we are not able to obtain, or if there are delays in obtaining, required regulatory approvals, we will not be able to commercialize, or will be delayed in commercializing, product candidates we may develop, and our ability to generate revenue will be materially impaired.

Any product candidates we may develop and the activities associated with their development and commercialization, including their design, testing, manufacture, recordkeeping, labeling, storage, approval, advertising, promotion, sale, import, export, and distribution, are subject to comprehensive regulation by the FDA, the EMA and other regulatory authorities in the United States and by comparable authorities in other countries. Failure to obtain marketing approval for a product candidate will prevent us from commercializing the product candidate in a given jurisdiction. We have not received approval to market any product candidates from regulatory authorities in any jurisdiction. We have only limited experience in filing and supporting the applications necessary to gain marketing approvals and expect to rely on third parties to assist us in this process. Securing regulatory approval requires the submission of extensive preclinical and clinical data and supporting information to the various regulatory authorities for each therapeutic indication to establish the biological product candidate's safety, purity, and potency. Securing regulatory approval also requires the submission of extensive information about the product manufacturing process, and inspection of manufacturing facilities by, the relevant regulatory authority. Any product candidates we develop may not be effective, may be only moderately effective, or may prove to have undesirable or unintended side effects, toxicities, or other characteristics that may preclude our obtaining marketing approval or prevent or limit commercial use.

The process of obtaining marketing approvals, both in the United States and abroad, is expensive, may take many years if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity, and novelty of the product candidates involved. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted product application, may cause delays in the approval or rejection of an application. The FDA and comparable authorities in other countries have substantial discretion in the approval process and may refuse to accept any application or may decide that our data is insufficient for approval and require additional preclinical, clinical, or other studies. In addition, varying interpretations of the data obtained from preclinical and clinical testing could delay, limit, or prevent marketing approval of a product candidate. Any marketing approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved medicine not commercially viable.

If we experience delays in obtaining approval or if we fail to obtain approval of any product candidates we may develop, the commercial prospects for those product candidates may be harmed, and our ability to generate revenues will be materially impaired.

Failure to obtain marketing approval in foreign jurisdictions would prevent any product candidates we may develop from being marketed in such jurisdictions, which, in turn, would materially impair our ability to generate revenue.

In order to market and sell any product candidates we may develop in the European Union and other foreign jurisdictions, we or our third-party collaborators must obtain separate marketing approvals (a single one for the European Union) and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many countries outside the United States, it is required that the product candidate be approved for reimbursement before the product candidate can be approved for sale in that country. We or these third parties may not obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. We may not be able to file for marketing approvals and may not receive necessary approvals to commercialize our medicines in any jurisdiction, which would materially impair our ability to generate revenue.

On June 23, 2016, the U.K. electorate voted in favor of leaving the EU, commonly referred to as “Brexit.” Thereafter, on March 29, 2017, the country formally notified the European Union of its intention to withdraw pursuant to Article 50 of the Lisbon Treaty. The withdrawal of the United Kingdom from the European Union was due to occur on March 29, 2019, but has now been extended to October 31, 2019. It is possible that there will be further extension. If the Withdrawal Agreement as currently drafted is ratified by the U.K. parliament, there will be a period of two years during which the regulatory regime will remain essentially the same across the United Kingdom and the EU.

Since the regulatory framework for pharmaceutical products in the United Kingdom relating to quality, safety and efficacy of pharmaceutical products, clinical trials, marketing authorization, commercial sales and distribution of pharmaceutical products is derived from EU directives and regulations, Brexit will materially impact the future regulatory regime which applies to products and the approval of product candidates in the United Kingdom. In the first instance, a separate United Kingdom authorization from any centralized authorization for the EU would need to be applied for. In the immediately foreseeable future, the process is likely to remain very similar to that applicable in the EU, albeit that the processes for applications will be separate. Longer term, the United Kingdom is likely to develop its own legislation that diverges from that in the EU.

Even if we, or any collaborators we may have, obtain marketing approvals for any product candidates we develop, the terms of approvals and ongoing regulation of our product candidates could require the substantial expenditure of resources and may limit how we, or they, manufacture and market our product candidates, which could materially impair our ability to generate revenue.

Any product candidate for which we obtain marketing approval, along with the manufacturing processes, post-approval clinical data, labeling, advertising, and promotional activities for such medicine, will be subject to continual requirements of and review by the FDA, EMA and other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, facility registration and drug listing requirements, cGMP requirements relating to quality control, quality assurance and corresponding maintenance of records and documents, and requirements regarding the distribution of samples to physicians and recordkeeping. Even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the medicine may be marketed or to the conditions of approval, or

contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the medicine.

Accordingly, assuming we, or any collaborators we may have, receive marketing approval for one or more product candidates we develop, we, and such collaborators, and our and their contract manufacturers will continue to expend time, money, and effort in all areas of regulatory compliance, including manufacturing, production, product surveillance, and quality control. If we and such collaborators are not able to comply with post-approval regulatory requirements, we and such collaborators could have the marketing approvals for our products withdrawn by regulatory authorities and our, or such collaborators', ability to market any future products could be limited, which could adversely affect our ability to achieve or sustain profitability. Further, the cost of compliance with post-approval regulations may have a negative effect on our business, operating results, financial condition, and prospects.

Any product candidate for which we obtain marketing approval could be subject to restrictions or withdrawal from the market, and we may be subject to substantial penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our medicines, when and if any of them are approved.

The FDA, the EMA, and other regulatory agencies closely regulate the post-approval marketing and promotion of medicines to ensure that they are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA, the EMA and other regulatory agencies impose stringent restrictions on manufacturers' communications regarding off-label use, and if we market our medicines for off-label use, we may be subject to enforcement action for off-label marketing by the FDA and other federal and state enforcement agencies, including the Department of Justice. Violation of the Federal Food, Product, and Cosmetic Act and other statutes, including the False Claims Act, and equivalent legislation in other countries relating to the promotion and advertising of prescription products may also lead to investigations or allegations of violations of federal and state and other countries' health care fraud and abuse laws and state consumer protection laws. Even if it is later determined we were not in violation of these laws, we may be faced with negative publicity, incur significant expenses defending our actions and have to divert significant management resources from other matters.

In addition, later discovery of previously unknown problems with our medicines, manufacturers, or manufacturing processes, or failure to comply with regulatory requirements, may yield various negative consequences, including:

- restrictions on such medicines, manufacturers, or manufacturing processes;
- restrictions on the labeling or marketing of a medicine;
- restrictions on the distribution or use of a medicine;
- requirements to conduct post-marketing clinical trials;
- receipt of warning or untitled letters;
- withdrawal of the medicines from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of medicines;
- fines, restitution, or disgorgement of profits or revenue;
- restrictions on future procurements with governmental authorities;
- suspension or withdrawal of marketing approvals;
- suspension of any ongoing clinical trials;
- refusal to permit the import or export of our medicines;
- product seizure; and
- injunctions or the imposition of civil or criminal penalties.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. The occurrence of any event or penalty described above may inhibit our ability to commercialize any product candidates we may develop and adversely affect our business, financial condition, results of operations, and prospects.

Our relationships with healthcare providers, physicians, and third-party payors will be subject to applicable anti-kickback, fraud and abuse, anti-bribery and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm, and diminished profits and future earnings.

Healthcare providers, physicians, and third-party payors play a primary role in the recommendation and prescription of any product candidates that we may develop for which we obtain marketing approval. Our future arrangements with third-party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell, and distribute our medicines for which we obtain marketing approval. Restrictions under applicable federal and state healthcare laws and regulations include the following:

- federal false claims, false statements and civil monetary penalties laws prohibiting, among other things, any person from knowingly presenting, or causing to be presented, a false claim for payment of government funds or knowingly making, or causing to be made, a false statement to get a false claim paid;
- federal healthcare program anti-kickback law, which prohibits, among other things, persons from soliciting, receiving or providing remuneration, directly or indirectly, to induce either the referral of an individual, for an item or service or the purchasing or ordering of a good or service, for which payment may be made under federal healthcare programs such as Medicare and Medicaid;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which, in addition to privacy protections applicable to healthcare providers and other entities, prohibits executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;
- the federal Food, Drug, and Cosmetic Act, or the FDCA, which among other things, strictly regulates drug marketing, prohibits manufacturers from marketing such products for off-label use and regulates the distribution of samples;
- federal laws that require pharmaceutical manufacturers to report certain calculated product prices to the government or provide certain discounts or rebates to government authorities or private entities, often as a condition of reimbursement under government healthcare programs;
- the so-called “federal sunshine” law under the Healthcare Reform Act, which requires pharmaceutical and medical device companies to monitor and report certain financial interactions with certain healthcare providers to the Center for Medicare & Medicaid Services within the U.S. Department of Health and Human Services for re-disclosure to the public related to payments or transfer of value made to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members; and
- analogous state and foreign laws and regulations, such as state anti-kickback, anti-bribery and false claims laws, which may apply to healthcare items or services that are reimbursed by non-governmental third-party payors, including private insurers.

Some state laws also require pharmaceutical companies to comply with specific compliance standards, restrict financial interactions between pharmaceutical companies and healthcare providers or require pharmaceutical companies to report information related to payments to health care providers or marketing expenditures.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. Given the breadth of the laws and regulations, limited guidance for certain laws and regulations and evolving government interpretations of the laws and regulations, governmental authorities may possibly conclude that our business practices may not comply with healthcare laws and regulations. If our operations are found to be in violation of any of the laws described above or any other government regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, exclusion from participation in government health care programs, such as Medicare and Medicaid, imprisonment, and the curtailment or restructuring of our operations, any of which could adversely affect our business, financial condition, results of operations, and prospects.

The provision of benefits or advantages to physicians to induce or encourage the prescription, recommendation, endorsement, purchase, supply, order, or use of medicinal products is prohibited in the European Union. The provision of benefits or advantages to physicians is also governed by the national anti-bribery laws of European Union Member States, such as the U.K. Bribery Act 2010. Infringement of these laws could result in substantial fines and imprisonment.

Payments made to physicians in certain European Union Member States must be publicly disclosed. Moreover, agreements with physicians often must be the subject of prior notification and approval by the physician's employer, his or her competent professional organization, and/or the regulatory authorities of the individual European Union Member States. These requirements are provided in the national laws, industry codes, or professional codes of conduct applicable in the European Union Member States. Failure to comply with these requirements could result in reputational risk, public reprimands, administrative penalties, fines or imprisonment.

The efforts of the Trump Administration to pursue regulatory reform may limit the FDA's ability to engage in oversight and implementation activities in the normal course, and that could negatively impact our business.

The Trump Administration has taken several executive actions, including the issuance of a number of executive orders, that could impose significant burdens on, or otherwise materially delay, the FDA's ability to engage in routine regulatory and oversight activities such as implementing statutes through rulemaking, issuance of guidance, and review and approval of marketing applications. On January 30, 2017, President Trump issued an executive order, applicable to all executive agencies, including the FDA, that requires that for each notice of proposed rulemaking or final regulation to be issued in fiscal year 2017, the agency shall identify at least two existing regulations to be repealed, unless prohibited by law. These requirements are referred to as the "two-for-one" provisions. This executive order includes a budget neutrality provision that requires the total incremental cost of all new regulations in the 2017 fiscal year, including repealed regulations, to be no greater than zero, except in limited circumstances. For fiscal years 2018 and beyond, the executive order requires agencies to identify regulations to offset any incremental cost of a new regulation. In interim guidance issued by the Office of Information and Regulatory Affairs within the Office of Management and on February 2, 2017, the administration indicates that the "two-for-one" provisions may apply not only to agency regulations, but also to significant agency guidance documents. It is difficult to predict how these requirements will be implemented, and the extent to which they will impact the FDA's ability to exercise its regulatory authority. If these executive actions impose constraints on FDA's ability to engage in oversight and implementation activities in the normal course, our business may be negatively impacted.

Healthcare and other reform legislation, may increase the difficulty and cost for us and any collaborators we may have to obtain marketing approval of and commercialize any product candidates we may develop and affect the prices we, or they, may obtain.

In the United States and some foreign jurisdictions, there have been and continue to be ongoing efforts to implement legislative and regulatory changes regarding the healthcare system. Such changes could prevent or

delay marketing approval of any product candidates that we may develop, restrict or regulate post-approval activities, and affect our ability to profitably sell any product candidates for which we obtain marketing approval. Although we cannot predict what healthcare or other reform efforts will be successful, such efforts may result in more rigorous coverage criteria, in additional downward pressure on the price that we, or our future collaborators, may receive for any approved products or in other consequences that may adversely affect our ability to achieve or maintain profitability.

Within the United States, the federal government and individual states have aggressively pursued healthcare reform, as evidenced by the passing of the Healthcare Reform Act and the ongoing efforts to modify or repeal that legislation. The Healthcare Reform Act substantially changed the way healthcare is financed by both governmental and private insurers and contains a number of provisions that affect coverage and reimbursement of drug products and/or that could potentially reduce the demand for pharmaceutical products such as increasing drug rebates under state Medicaid programs for brand name prescription drugs and extending those rebates to Medicaid managed care and assessing a fee on manufacturers and importers of brand name prescription drugs reimbursed under certain government programs, including Medicare and Medicaid. Other aspects of healthcare reform, such as expanded government enforcement authority and heightened standards that could increase compliance-related costs, could also affect our business. Modifications have been implemented under the Trump Administration and additional modifications or repeal may occur. There are, and may continue to be, judicial challenges. See “Government Regulation—Health Care and Other Reform.” We cannot predict the ultimate content, timing or effect of any changes to the Healthcare Reform Act or other federal and state reform efforts. There is no assurance that federal or state health care reform will not adversely affect our future business and financial results, and we cannot predict how future federal or state legislative, judicial or administrative changes relating to healthcare reform will affect our business.

Federal and state governments have shown significant interest in implementing cost-containment programs to limit the growth of government-paid healthcare costs, including price controls, waivers from Medicaid drug rebate law requirements, restrictions on reimbursement and requirements for substitution of generic products for branded prescription drugs. The private sector has also sought to control healthcare costs by limiting coverage or reimbursement or requiring discounts and rebates on products. We are unable to predict what additional legislation, regulations or policies, if any, relating to the healthcare industry or third party coverage and reimbursement may be enacted in the future or what effect such legislation, regulations or policies would have on our business. Any cost containment measures could significantly decrease the available coverage and the price we might establish for our potential products, which would have an adverse effect on our net revenues and operating results.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for biotechnology products. We cannot be sure whether additional legislative changes will be enacted, or whether FDA regulations, guidance or interpretations for biological products will be changed, or what the impact of such changes on the marketing approvals of our product candidates, if any, may be. In addition, increased scrutiny by the U.S. Congress of the FDA’s approval and decision-making processes may significantly delay or prevent marketing approval, as well as subject us to more stringent product labeling and post-marketing testing and other requirements.

Fast track, breakthrough, or regenerative medicine advanced therapy designation by the FDA may not actually lead to a faster development or regulatory review or approval process, and does not assure FDA approval of any product candidates we may develop.

FDA’s fast track, breakthrough, and regenerative medicine advanced therapy, or RMAT, programs are intended to expedite the development of certain qualifying products intended for the treatment of serious diseases and

conditions. If a product candidate is intended for the treatment of a serious or life threatening condition and preclinical or clinical data demonstrate the product's potential to address an unmet medical need for this condition, the sponsor may apply for FDA fast track designation. A product candidate may be designated as a breakthrough therapy if it is intended to treat a serious or life-threatening condition and preliminary clinical evidence indicates that the product candidate may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints. A product candidate may receive RMAT designation if it is a regenerative medicine therapy that is intended to treat, modify, reverse or cure a serious or life-threatening condition, and preliminary clinical evidence indicates that the product candidate has the potential to address an unmet medical need for such condition. While we may seek fast track, breakthrough, and/or RMAT designation, there is no guarantee that we will be successful in obtaining any such designation. Even if we do obtain such designation, we may not experience a faster development process, review or approval compared to conventional FDA procedures. A fast track, breakthrough, or RMAT designation does not ensure that the product candidate will receive marketing approval or that approval will be granted within any particular timeframe. In addition, the FDA may withdraw fast track, breakthrough, or RMAT designation if it believes that the designation is no longer supported by data from our clinical development program. Fast track, breakthrough, and/or RMAT designation alone do not guarantee qualification for the FDA's priority review procedures.

Priority review designation by the FDA may not lead to a faster regulatory review or approval process and, in any event, does not assure FDA approval of any product candidates we may develop.

If the FDA determines that a product candidate is intended to treat a serious disease or condition and, if approved, would provide a significant improvement in the safety or effectiveness of the treatment, prevention, or diagnosis of such disease or condition, the FDA may designate the product candidate for priority review. A priority review designation means that the goal for the FDA to review a marketing application is six months from filing of the application, rather than the standard review period of ten months. We may request priority review for certain of our product candidates. The FDA has broad discretion with respect to whether or not to grant priority review status to a product candidate, so even if we believe a particular product candidate is eligible for such designation or status, the FDA may disagree and decide not to grant it. Moreover, a priority review designation does not necessarily mean a faster regulatory review process or necessarily confer any advantage with respect to approval compared to conventional FDA procedures. Receiving priority review from the FDA does not guarantee approval within the six-month review cycle or thereafter.

We may not be able to obtain orphan drug exclusivity for one or more of our product candidates, and even if we do, that exclusivity may not prevent the FDA or the EMA from approving other competing products.

Under the Orphan Drug Act, the FDA may designate a product candidate as an orphan drug if it is a drug or biologic intended to treat a rare disease or condition. A similar regulatory scheme governs approval of orphan product candidates by the EMA in the European Union. Generally, if a product with an orphan drug designation subsequently receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the FDA or the EMA from approving another marketing application for another product candidate for the same orphan therapeutic indication for that time period. The applicable period is seven years in the United States and ten years in the European Union. The exclusivity period in the European Union can be reduced to six years if a product no longer meets the criteria for orphan drug designation, in particular if the product is sufficiently profitable so that market exclusivity is no longer justified.

The FDA's standards for granting orphan drug exclusivity in the gene therapy context are unclear and evolving. In order for the FDA to grant orphan drug exclusivity to one of our product candidates, the agency must find that the product candidate is indicated for the treatment of a condition or disease that affects fewer than

200,000 individuals in the United States or that affects more than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and making the product candidate available for the disease or condition will be recovered from sales of the product in the United States. The FDA may conclude that the condition or disease for which we seek orphan drug exclusivity does not meet this standard. Even if we obtain orphan drug exclusivity for a product candidate, that exclusivity may not effectively protect the product candidate from competition because different product candidates can be approved for the same condition. In addition, even after an orphan drug is approved, the FDA can subsequently approve the same product candidate for the same condition if the FDA concludes that the later product candidate is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care compared with the product that has orphan exclusivity. Orphan drug exclusivity may also be lost if the FDA or EMA determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the product to meet the needs of the patients with the rare disease or condition.

On August 3, 2017, the Congress passed the FDA Reauthorization Act of 2017, or FDARA. FDARA, among other things, codified the FDA's pre-existing regulatory interpretation, to require that a drug sponsor demonstrate the clinical superiority of an orphan drug that is otherwise the same as a previously approved drug for the same rare disease in order to receive orphan drug exclusivity. The new legislation reverses prior precedent holding that the Orphan Drug Act unambiguously requires that the FDA recognize the orphan exclusivity period regardless of a showing of clinical superiority. The FDA may further reevaluate the Orphan Drug Act and its regulations and policies. We do not know if, when, or how the FDA may change the orphan drug regulations and policies in the future, and it is uncertain how any changes might affect our business. Depending on what changes the FDA may make to its orphan drug regulations and policies, our business could be adversely impacted.

Our employees, principal investigators, consultants, and commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, consultants, and commercial partners, and, if we commence clinical trials, our principal investigators. Misconduct by these parties could include intentional failures to comply with FDA regulations or the regulations applicable in the European Union and other jurisdictions, provide accurate information to the FDA, the EMA, and other regulatory authorities, comply with healthcare fraud and abuse laws and regulations in the United States and abroad, report financial information or data accurately, or disclose unauthorized activities to us. In particular, sales, marketing, and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs, and other business arrangements. Such misconduct also could involve the improper use of information obtained in the course of clinical trials or interactions with the FDA, the EMA or other regulatory authorities, which could result in regulatory sanctions and cause serious harm to our reputation. We have adopted a code of conduct applicable to all of our employees, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from government investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, financial condition, results of operations, and prospects, including the imposition of significant fines or other sanctions.

Laws and regulations governing any international operations we may have in the future may preclude us from developing, manufacturing and selling certain product candidates outside of the United States and require us to develop and implement costly compliance programs.

We are subject to numerous laws and regulations in each jurisdiction outside the United States in which we operate. The creation, implementation and maintenance of international business practices compliance programs is costly and such programs are difficult to enforce, particularly where reliance on third parties is required.

The Foreign Corrupt Practices Act, or FCPA, prohibits any U.S. individual or business from paying, offering, authorizing payment or offering of anything of value, directly or indirectly, to any foreign official, political party or candidate for the purpose of influencing any act or decision of the foreign entity in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the United States to comply with certain accounting provisions requiring the company to maintain books and records that accurately and fairly reflect all transactions of the corporation, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations. The anti-bribery provisions of the FCPA are enforced primarily by the Department of Justice. The SEC is involved with enforcement of the books and records provisions of the FCPA.

Similarly, the U.K. Bribery Act 2010 has extra-territorial effect for companies and individuals having a connection with the United Kingdom. The U.K. Bribery Act prohibits inducements both to public officials and private individuals and organizations. Compliance with the FCPA and the U.K. Bribery Act is expensive and difficult, particularly in countries in which corruption is a recognized problem. In addition, the FCPA presents particular challenges in the pharmaceutical industry, because, in many countries, hospitals are operated by the government, and doctors and other hospital employees are considered foreign officials. Certain payments to hospitals in connection with clinical trials and other work have been deemed to be improper payments to government officials and have led to FCPA enforcement actions.

Various laws, regulations and executive orders also restrict the use and dissemination outside of the United States, or the sharing with certain non-U.S. nationals, of information classified for national security purposes, as well as certain products and technical data relating to those products. Our expansion outside of the United States has required, and will continue to require, us to dedicate additional resources to comply with these laws, and these laws may preclude us from developing, manufacturing, or selling certain drugs and drug candidates outside of the United States, which could limit our growth potential and increase our development costs. The failure to comply with laws governing international business practices may result in substantial penalties, including suspension or debarment from government contracting. Violation of the FCPA can result in significant civil and criminal penalties. Indictment alone under the FCPA can lead to suspension of the right to do business with the U.S. government until the pending claims are resolved. Conviction of a violation of the FCPA can result in long-term disqualification as a government contractor. The termination of a government contract or relationship as a result of our failure to satisfy any of our obligations under laws governing international business practices would have a negative impact on our operations and harm our reputation and ability to procure government contracts. The SEC also may suspend or bar issuers from trading securities on U.S. exchanges for violations of the FCPA's accounting provisions.

We are subject to stringent privacy laws, information security laws, regulations, policies and contractual obligations related to data privacy and security and changes in such laws, regulations, policies and contractual obligations could adversely affect our business.

We are subject to data privacy and protection laws and regulations that apply to the collection, transmission, storage and use of personally-identifying information, which among other things, impose certain requirements

relating to the privacy, security and transmission of personal information, including comprehensive regulatory systems in the U.S. and EU. The legislative and regulatory landscape for privacy and data protection continues to evolve in jurisdictions worldwide, and there has been an increasing focus on privacy and data protection issues with the potential to affect our business. Failure to comply with any of these laws and regulations could result in enforcement action against us, including fines, imprisonment of company officials and public censure, claims for damages by affected individuals, damage to our reputation and loss of goodwill, any of which could have a material adverse effect on our business, financial condition, results of operations or prospects.

There are numerous U.S. federal and state laws and regulations related to the privacy and security of personal information. In particular, regulations promulgated pursuant to the Health Insurance Portability and Accountability Act of 1996, or HIPAA, establish privacy and security standards that limit the use and disclosure of individually identifiable health information, or protected health information, and require the implementation of administrative, physical and technological safeguards to protect the privacy of protected health information and ensure the confidentiality, integrity and availability of electronic protected health information. Determining whether protected health information has been handled in compliance with applicable privacy standards and our contractual obligations can be complex and may be subject to changing interpretation.

If we are unable to properly protect the privacy and security of protected health information, we could be found to have breached our contracts. Further, if we fail to comply with applicable privacy laws, including applicable HIPPA privacy and security standards, we could face civil and criminal penalties. The U.S. Department of Health and Human Services, of HHS, has the discretion to impose penalties without attempting to resolve violations through informal means. HHS enforcement activity can result in financial liability and reputational harm, and responses to such enforcement activity can consume significant internal resources. In addition, state attorneys general are authorized to bring civil actions seeking either injunctions or damages in response to violations that threaten the privacy of state residents. We cannot be sure how these regulations will be interpreted, enforced or applied to our operations. In addition to the risks associated with enforcement activities and potential contractual liabilities, our ongoing efforts to comply with evolving laws and regulations at the federal and state level may be costly and require ongoing modifications to our policies, procedures and systems.

In the EU, we are subject to the General Data Protection Regulation, or GDPR, which went into effect in May 2018 and which imposes new obligations on companies that operate in our industry with respect to the processing of personal data and the cross-border transfer of such data. The GDPR imposes onerous accountability obligations requiring data controllers and processors to maintain a record of their data processing and policies. If our or our partners' or service providers' privacy or data security measures fail to comply with the GDPR requirements, we may be subject to litigation, regulatory investigations, enforcement notices requiring us to change the way we use personal data and/or fines of up to 20 million Euros or up to 4% of the total worldwide annual turnover of the preceding financial year, whichever is higher, as well as compensation claims by affected individuals, negative publicity, reputational harm and a potential loss of business and goodwill.

While we continue to address the implications of the recent changes to EU data privacy regulations, data privacy remains an evolving landscape at both the domestic and international level, with new regulations coming into effect and continued legal challenges, and our efforts to comply with the evolving data protection rules may be unsuccessful. It is possible that these laws may be interpreted and applied in a manner that is inconsistent with our practices. We must devote significant resources to understanding and complying with this changing landscape. Failure to comply with laws regarding data protection would expose us to risk of enforcement actions taken by data protection authorities in the EU and elsewhere and carries with it the potential for significant penalties if we are found to be non-compliant. Similarly, failure to comply with federal and state laws in the United States regarding privacy and security of personal information could expose us to penalties under such laws. Any such failure to comply with data protection and privacy laws could result in

government-imposed fines or orders requiring that we change our practices, claims for damages or other liabilities, regulatory investigations and enforcement action, litigation and significant costs for remediation, any of which could adversely affect our business. Even if we are not determined to have violated these laws, government investigations into these issues typically require the expenditure of significant resources and generate negative publicity, which could harm our business, financial condition, results of operations or prospects.

Risks related to employee matters, managing growth and information technology

Our future success depends on our ability to retain our Chief Executive Officer, Chief Scientific Officer and other key executives and to attract, retain, and motivate qualified personnel.

We are highly dependent on John Evans, our Chief Executive Officer, and Dr. Giuseppe Ciaramella, our Chief Scientific Officer, as well as the other principal members of our management and scientific teams. Mr. Evans, Dr. Ciaramella and such other principal members are employed "at will," meaning we or they may terminate the employment at any time. We do not maintain "key person" insurance for any of our executives or other employees. The loss of the services of any of these persons could impede the achievement of our research, development, and commercialization objectives.

Recruiting and retaining qualified scientific, clinical, manufacturing, and sales and marketing personnel will also be critical to our success. We may not be able to attract and retain these personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors, including our scientific co-founders, may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. The inability to recruit, or loss of services of certain executives, key employees, consultants, or advisors, may impede the progress of our research, development, and commercialization objectives and have a material adverse effect on our business, financial condition, results of operations, and prospects.

We expect to expand our development, regulatory, and future sales and marketing capabilities, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.

As of June 30, 2019, we had more than 80 full-time employees and, in connection with the growth and advancement of our pipeline and becoming a public company, we expect to increase the number of our employees and the scope of our operations, particularly in the areas of drug development, regulatory affairs, and sales and marketing. To manage our anticipated future growth, we must continue to implement and improve our managerial, operational, and financial systems, expand our facilities, and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expected expansion of our operations or recruit and train additional qualified personnel. Moreover, the expected physical expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

As a growing biotechnology company, we are actively pursuing new platforms and product candidates in many therapeutic areas and across a wide range of diseases. Successfully developing product candidates for and fully understanding the regulatory and manufacturing pathways to all of these therapeutic areas and disease states requires a significant depth of talent, resources and corporate processes in order to allow simultaneous

execution across multiple areas. Due to our limited resources, we may not be able to effectively manage this simultaneous execution and the expansion of our operations or recruit and train additional qualified personnel. This may result in weaknesses in our infrastructure, give rise to operational mistakes, legal or regulatory compliance failures, loss of business opportunities, loss of employees and reduced productivity among remaining employees. The physical expansion of our operations may lead to significant costs and may divert financial resources from other projects, such as the development of our product candidates. If our management is unable to effectively manage our expected development and expansion, our expenses may increase more than expected, our ability to generate or increase our revenue could be reduced and we may not be able to implement our business strategy. Our future financial performance and our ability to compete effectively and commercialize our product candidates, if approved, will depend in part on our ability to effectively manage the future development and expansion of our company.

Our internal computer systems, or those of our third-party vendors, collaborators or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our product development programs, compromise sensitive information related to our business or prevent us from accessing critical information, potentially exposing us to liability or otherwise adversely affecting our business.

Our internal computer systems and those of our current and any future third-party vendors, collaborators and other contractors or consultants are vulnerable to damage or interruption from computer viruses, computer hackers, malicious code, employee theft or misuse, denial-of-service attacks, sophisticated nation-state and nation-state-supported actors, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we seek to protect our information technology systems from system failure, accident and security breach, if such an event were to occur and cause interruptions in our operations, it could result in a disruption of our development programs and our business operations, whether due to a loss of our trade secrets or other proprietary information or other disruptions. For example, the loss of clinical trial data from future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. If we were to experience a significant cybersecurity breach of our information systems or data, the costs associated with the investigation, remediation and potential notification of the breach to counter-parties and data subjects could be material. In addition, our remediation efforts may not be successful. If we do not allocate and effectively manage the resources necessary to build and sustain the proper technology and cybersecurity infrastructure, we could suffer significant business disruption, including transaction errors, supply chain or manufacturing interruptions, processing inefficiencies, data loss or the loss of or damage to intellectual property or other proprietary information.

To the extent that any disruption or security breach were to result in a loss of, or damage to, our or our third-party vendors', collaborators' or other contractors' or consultants' data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability including litigation exposure, penalties and fines, we could become the subject of regulatory action or investigation, our competitive position could be harmed and the further development and commercialization of our product candidates could be delayed. Any of the above could have a material adverse effect on our business, financial condition, results of operations or prospects.

Risks related to this offering and ownership of our common stock

We do not know whether a market will develop for our common stock or what the market price of our common stock will be, and, as a result, it may be difficult for you to sell your shares of our common stock.

Before this offering, there was no public trading market for our common stock. If a market for our common stock does not develop or is not sustained, it may be difficult for you to sell your shares of common stock at an

attractive price or at all. We cannot predict the prices at which our common stock will trade. It is possible that in one or more future periods our results of operations may be below the expectations of public market analysts and investors, and, as a result of these and other factors, the price of our common stock may fall.

You will incur immediate and substantial dilution as a result of this offering.

If you purchase common stock in this offering, you will incur immediate and substantial dilution of $ per share, representing the difference between the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, and our pro forma net tangible book value per share after giving effect to this offering and the automatic conversion of all outstanding shares of our preferred stock upon the closing of this offering. Moreover, we issued options in the past that allow the holders to acquire common stock at prices significantly below the assumed initial public offering price. As of June 30, 2019, there were 19,987,232 shares subject to outstanding options with a weighted-average exercise price of $0.75 per share. To the extent that these outstanding options are ultimately exercised or the underwriters exercise their option to purchase additional shares, you will incur further dilution. For a further description of the dilution you will experience immediately after this offering, see “Dilution.”

The market price of our common stock may be volatile, which could result in substantial losses for investors purchasing shares in this offering.

The initial public offering price for our common stock was determined through negotiations with the underwriters. This initial public offering price may vary from the market price of our common stock after the offering. As a result, you may not be able to sell your common stock at or above the initial public offering price. Some of the factors that may cause the market price of our common stock to fluctuate include:

- the success of existing or new competitive product candidates or technologies;
- the timing and results of preclinical studies for any product candidates that we may develop;
- failure or discontinuation of any of our product development and research programs;
- results of preclinical studies, clinical trials, or regulatory approvals of product candidates of our competitors, or announcements about new research programs or product candidates of our competitors;
- developments or changing views regarding the use of genetic medicines, including those that involve gene editing;
- commencement or termination of collaborations for our product development and research programs;
- regulatory or legal developments in the United States and other countries;
- developments or disputes concerning patent applications, issued patents, or other proprietary rights;
- the recruitment or departure of key personnel;
- the level of expenses related to any of our research programs, clinical development programs, or product candidates that we may develop;
- the results of our efforts to develop additional product candidates or products;
- actual or anticipated changes in estimates as to financial results, development timelines, or recommendations by securities analysts;
- announcement or expectation of additional financing efforts;

- sales of our common stock by us, our insiders or other stockholders;
- expiration of market stand-off or lock-up agreement;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in estimates or recommendations by securities analysts, if any, that cover our stock;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, industry, and market conditions; and
- the other factors described in this “Risk Factors” section.

In recent years, the stock market in general, and the market for pharmaceutical and biotechnology companies in particular, has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to changes in the operating performance of the companies whose stock is experiencing those price and volume fluctuations. Broad market and industry factors may seriously affect the market price of our common stock, regardless of our actual operating performance. These fluctuations may be even more pronounced in the trading market for our stock shortly following this offering. Following periods of such volatility in the market price of a company’s securities, securities class action litigation has often been brought against that company. Because of the potential volatility of our stock price, we may become the target of securities litigation in the future.

Securities litigation could result in substantial costs and divert management’s attention and resources from our business.

If securities analysts do not publish research or reports about our business or if they publish negative evaluations of our stock, the price of our stock could decline.

The trading market for our common stock will rely in part on the research and reports that industry or financial analysts publish about us or our business. We do not currently have and may never obtain research coverage by industry or financial analysts. If no or few analysts commence coverage of us, the trading price of our stock would likely decrease. Even if we do obtain analyst coverage, if one or more of the analysts covering our business downgrade their evaluations of our stock, the price of our stock could decline. If one or more of these analysts cease to cover our stock, we could lose visibility in the market for our stock, which in turn could cause our stock price to decline.

A significant portion of our total outstanding shares is restricted from immediate resale but may be sold into the market in the near future, which could cause the market price of our common stock to decline significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares of common stock intend to sell shares, could reduce the market price of our common stock. After this offering and after giving effect to the conversion of all outstanding shares of our preferred stock into 130,616,784 shares of our common stock upon the closing of this offering, we will have shares of common stock outstanding, or shares if the underwriters exercise their option to purchase additional shares in full, in each case based on the 44,246,723 shares of our common stock outstanding as of June 30, 2019. Of these shares, the shares (or shares if the underwriters exercise their option to purchase additional shares in full) we are selling in this offering may be resold in the public market immediately, unless purchased

by our affiliates. The remaining shares are currently restricted under securities laws or as a result of lock-up or other agreements, but will be able to be sold after this offering as described in the "Shares Eligible for Future Sale" section of this prospectus. Moreover, after this offering, holders of an aggregate of 130,616,784 shares of our common stock will have rights, subject to conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. We also plan to register all shares of common stock that we may issue under our equity compensation plans or that are issuable upon exercise of outstanding options. Once we register these shares, they can be freely sold in the public market upon issuance and once vested, subject to volume limitations applicable to affiliates and the lock-up agreements described in the "Underwriting" section of this prospectus. If any of these additional shares are sold, or if it is perceived that they will be sold, in the public market, the market price of our common stock could decline.

Insiders will continue to have substantial influence over us after this offering, which could limit your ability to affect the outcome of key transactions, including a change of control.

After this offering, our directors and executive officers and their affiliates will beneficially own shares representing approximately % of our outstanding common stock. As a result, these stockholders, if they act together, will be able to influence our management and affairs and all matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions. This concentration of ownership may have the effect of delaying or preventing a change in control of our company and might affect the market price of our common stock.

If we fail to establish and maintain proper and effective internal control over financial reporting, our operating results and our ability to operate our business could be harmed.

Ensuring that we have adequate internal financial and accounting controls and procedures in place so that we can produce accurate financial statements on a timely basis is a costly and time-consuming effort that needs to be re-evaluated frequently. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with generally accepted accounting principles. In connection with this offering, we intend to begin the process of documenting, reviewing and improving our internal controls and procedures for compliance with Section 404 of the Sarbanes-Oxley Act of 2002, or SOX, which will require annual management assessment of the effectiveness of our internal control over financial reporting. While we outsourced our finance and accounting personnel until the end of 2018, we have begun recruiting additional finance and accounting personnel with certain skill sets that we will need as a public company.

Implementing any appropriate changes to our internal controls may distract our officers and employees, entail substantial costs to modify our existing processes and take significant time to complete. These changes may not, however, be effective in maintaining the adequacy of our internal controls, and any failure to maintain that adequacy, or consequent inability to produce accurate financial statements on a timely basis, could increase our operating costs and harm our business. In addition, investors' perceptions that our internal controls are inadequate or that we are unable to produce accurate financial statements on a timely basis may harm our common share price and make it more difficult for us to effectively market and sell our service to new and existing customers.

We are an "emerging growth company," and the reduced disclosure requirements applicable to emerging growth companies may make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and may remain an emerging growth company for up to five years. For so long as we remain an emerging growth company, we are permitted and plan to rely on exemptions from certain disclosure

requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, or SOX Section 404, not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements, reduced disclosure obligations regarding executive compensation, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. As a result, the information we provide stockholders will be different than the information that is available with respect to other public companies. In this prospectus, we have not included all of the executive compensation related information that would be required if we were not an emerging growth company. We cannot predict whether investors will find our common stock less attractive if we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock, and our stock price may be more volatile.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards, and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

We will incur increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives and corporate governance practices.

As a public company, and particularly after we are no longer an "emerging growth company," we will incur significant legal, accounting, and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of The Nasdaq Global Market, and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. We expect that we will need to hire additional accounting, finance, and other personnel in connection with our becoming, and our efforts to comply with the requirements of being, a public company, and our management and other personnel will need to devote a substantial amount of time towards maintaining compliance with these requirements. These requirements will increase our legal and financial compliance costs and will make some activities more time-consuming and costly. For example, we expect that the rules and regulations applicable to us as a public company may make it more difficult and more expensive for us to obtain director and officer liability insurance, which could make it more difficult for us to attract and retain qualified members of our board of directors. We are currently evaluating these rules and regulations and cannot predict or estimate the amount of additional costs we may incur or the timing of such costs. These rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

Pursuant to SOX Section 404, we will be required to furnish a report by our management on our internal control over financial reporting beginning with our second filing of an Annual Report on Form 10-K with the SEC after we become a public company. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To achieve compliance with SOX Section 404 within the prescribed period, we will be engaged in a process to document and evaluate our internal control over financial reporting, which is

both costly and challenging. In this regard, we will need to continue to dedicate internal resources, potentially engage outside consultants, adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented, and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that we will not be able to conclude, within the prescribed timeframe or at all, that our internal control over financial reporting is effective as required by SOX Section 404. If we identify one or more material weaknesses, it could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements.

We have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

We cannot specify with certainty the particular uses of the net proceeds we will receive from this offering. Our management will have broad discretion in the application of the net proceeds, including for any of the purposes described in “Use of Proceeds.” Accordingly, you will have to rely upon the judgment of our management with respect to the use of the proceeds, with only limited information concerning management’s specific intentions. Our management may spend a portion or all of the net proceeds from this offering in ways that our stockholders may not desire or that may not yield a favorable return. The failure by our management to apply these funds effectively could harm our business, financial condition, results of operations and prospects. Pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

We do not expect to pay any dividends for the foreseeable future. Investors in this offering may never obtain a return on their investment.

You should not rely on an investment in our common stock to provide dividend income. We do not anticipate that we will pay any dividends to holders of our common stock in the foreseeable future. Instead, we plan to retain any earnings to maintain and expand our existing operations. In addition, any future credit facility may contain terms prohibiting or limiting the amount of dividends that may be declared or paid on our common stock. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any return on their investment. As a result, investors seeking cash dividends should not purchase our common stock.

Unfavorable global economic conditions could adversely affect our business, financial condition or results of operations.

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets. A severe or prolonged economic downturn, or additional global financial crises, could result in a variety of risks to our business, including weakened demand for our product candidates, if approved, or our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy could also strain our suppliers, possibly resulting in supply disruption. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

Provisions in our amended and restated certificate of incorporation, our amended and restated by-laws and Delaware law may have anti-takeover effects that could discourage an acquisition of us by others, even if an acquisition would be beneficial to our stockholders, and may prevent attempts by our stockholders to replace or remove our current management.

Our amended and restated certificate of incorporation, amended and restated by-laws and Delaware law contain provisions that may have the effect of discouraging, delaying or preventing a change in control of us or

changes in our management that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. Our amended and restated certificate of incorporation and by-laws, which will become effective upon the closing of this offering, include provisions that:

- authorize “blank check” preferred stock, which could be issued by our board of directors without stockholder approval and may contain voting, liquidation, dividend and other rights superior to our common stock;
- create a classified board of directors whose members serve staggered three-year terms;
- specify that special meetings of our stockholders can be called only by our board of directors;
- prohibit stockholder action by written consent;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum;
- provide that our directors may be removed only for cause;
- specify that no stockholder is permitted to cumulate votes at any election of directors;
- expressly authorized our board of directors to modify, alter or repeal our amended and restated by-laws; and
- require supermajority votes of the holders of our common stock to amend specified provisions of our amended and restated certificate of incorporation and amended and restated by-laws.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our management. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock.

In addition, because we are incorporated in the State of Delaware, we are governed by the provisions of Section 203 of the General Corporation Law of the State of Delaware, or the DGCL, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner.

Any provision of our amended and restated certificate of incorporation, amended and restated by-laws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

Our amended and restated certificate of incorporation designates the state or federal courts within the State of Delaware as the exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders’ ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation provides that, subject to limited exceptions, the state or federal courts within the State of Delaware will be exclusive forums for (1) any derivative action or proceeding brought on our behalf, (2) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (3) any action asserting a claim against us arising pursuant to any provision of the DGCL, our amended and restated certificate of incorporation or our amended and restated by-laws or (4) any other action asserting a claim against us that is governed by the

internal affairs doctrine. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock shall be deemed to have notice of and to have consented to the provisions of our amended and restated certificate of incorporation described above. This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers and employees. Alternatively, if a court were to find these provisions of our amended and restated certificate of incorporation inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business and financial condition.

Special note regarding forward-looking statements

This prospectus contains forward-looking statements. All statements other than statements of historical facts contained in this prospectus are forward-looking statements. In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “contemplate,” “believe,” “estimate,” “predict,” “potential” or “continue” or the negative of these terms or other similar expressions, although not all forward-looking statements contain these words. Forward-looking statements include, but are not limited to, statements concerning:

- the initiation, timing, progress and results of our research and development programs and preclinical and clinical studies;
- our ability to demonstrate, and the timing of, preclinical proof-of-concept *in vivo* for multiple programs;
- our ability to advance any product candidates that we may develop and successfully complete any clinical studies, including the manufacture of any such product candidates;
- our ability to pursue a comprehensive suite of clinically validated delivery modalities;
- our ability to quickly leverage our initial programs and to progress additional programs to create a clinical portfolio;
- the timing of our “waves” of investigational new drug applications filings;
- the implementation of our strategic plans for our business, programs, product candidates, and technology;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates and technology;
- developments related to our competitors and our industry;
- our ability to leverage the clinical, regulatory, and manufacturing advancements made by gene therapy and gene editing programs to accelerate our clinical trials and approval of product candidates;
- our ability to identify and enter into future license agreements and collaborations;
- developments related to base editing technologies;
- our ability to successfully develop our three distinct pipelines and obtain and maintain approval for our product candidates;
- regulatory developments in the United States and foreign countries;
- our ability to attract and retain key scientific and management personnel; and
- our use of proceeds from this offering, estimates of our expenses, capital requirements, and needs for additional financing.

The forward-looking statements in this prospectus are only predictions and are based largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of known and unknown risks, uncertainties and assumptions, including those described under the sections in this prospectus entitled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and elsewhere in this prospectus. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control, you should not rely on these forward-looking

statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in an evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise. The forward-looking statements contained in this prospectus are excluded from the safe harbor protection provided by the Private Securities Litigation Reform Act of 1995 and Section 27A of the Securities Act of 1933, as amended.

Use of proceeds

We estimate that the net proceeds to us from the sale of the shares of common stock in this offering will be approximately $ million, or approximately $ if the underwriters exercise their option to purchase additional shares in full, based upon an assumed initial price to the public of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses. Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share would increase (decrease) the net proceeds to us from this offering by approximately $, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same. We may also increase or decrease the number of shares we are offering. Each increase (decrease) of 1,000,000 shares in the number of shares offered by us would increase (decrease) the net proceeds to us from this offering by approximately $, assuming that the assumed initial public offering price remains the same, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

As of June 30, 2019, we had cash and cash equivalents of $126.8 million. The principal purposes of this offering are to increase our financial flexibility, create a public market for our common stock and to facilitate our access to the public equity markets.

We currently expect to use the net proceeds from this offering, together with our existing cash and cash equivalents, as follows:

- approximately $ million for continued research and development of our portfolio of base editing programs, including preclinical studies and advancement through potential preclinical proof-of-concept for our three delivery modalities;
- approximately $ million for IND-enabling studies and the potential initiation of clinical studies for certain of our current programs;
- approximately $ million for continued advancement of our platform technologies and discovery-stage research for other potential programs; and
- the remainder for general corporate purposes.

We may also use a portion of the net proceeds from this offering to acquire, in-license or invest in products, technologies or businesses that are complementary to our business. The amounts and timing of our actual expenditures will depend on numerous factors, including the progress of our preclinical development efforts, our operating costs and other factors described under “Risk Factors” in this prospectus.

Our expected use of net proceeds from this offering represents our current intentions based upon our present plans and business condition. As of the date of this prospectus, we cannot predict with complete certainty all of the particular uses for the net proceeds to be received upon the completion of this offering or the actual amounts that we will spend on the uses set forth above.

Based on our planned use of the net proceeds from this offering and our existing cash and cash equivalents, we estimate that such funds will be sufficient to enable us to fund our operating expenses, debt service, and capital expenditure requirements through at least the next months. We have based this estimate on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect.

We may find it necessary or advisable to use the net proceeds for other purposes, and we will have broad discretion in the application of the net proceeds. Pending the uses described above, we plan to invest the net proceeds from this offering in short-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government.

Dividend policy

We have never declared or paid any cash dividends on our capital stock. We intend to retain future earnings, if any, to finance the operation and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future. Any future determination related to our dividend policy will be made at the discretion of our board of directors after considering our financial condition, results of operations, capital requirements, business prospects and other factors our board of directors deems relevant, and subject to the restrictions contained in any future financing instruments. Our ability to pay cash dividends on our capital stock in the future may also be limited by the terms of any preferred securities we may issue or agreements governing any indebtedness we may incur.

Capitalization

The following table summarizes our cash and cash equivalents and capitalization as of December 31, 2018:

- on an actual basis;
- on a pro forma basis, to reflect (i) the automatic conversion of all outstanding shares of redeemable convertible preferred stock into an aggregate of 119,308,387 shares of common stock immediately prior to the closing of this offering, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus and (ii) the effectiveness of our amended and restated certificate of incorporation; and
- on a pro forma as adjusted basis, to further reflect the sale and issuance by us of shares of common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses.

You should read the information in this table together with the consolidated financial statements and related notes to those statements, as well as the information set forth under the headings “Selected Financial Data” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

	As of December 31, 2018		
(in thousands)	**Actual**	**Pro forma**	**Pro forma as adjusted**
Cash and cash equivalents	$ 146,443	$ 146,443	$
Redeemable convertible preferred stock (par value $0.01 per share; actual: 127,688 authorized and 119,308 issued and outstanding; pro forma and pro forma as adjusted: no shares authorized, issued or outstanding)	251,434	—	—
Stockholders’ equity:			
Common stock ($0.01 par value; actual: 190,000 shares authorized and 24,956 shares issued and outstanding; pro forma: shares authorized and 144,265 shares issued and outstanding; pro forma as adjusted: shares authorized and shares issued and outstanding)	250	1,443	
Additional paid-in capital	7,062	257,303	
Accumulated deficit	(124,718)	(124,718)	
Total stockholders’ (deficit) equity	(117,406)	134,028	
Total capitalization	$ 134,028	$ 134,028	$

Each $1.00 increase (decrease) in the assumed initial price to the public of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) each of cash and cash equivalents, additional paid-in capital, total stockholders’ deficit and total capitalization on a pro forma as adjusted basis by approximately $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses. We may also increase or decrease the number of shares we are offering. Each increase (decrease) of 1,000,000 shares in the number of shares offered by us would increase (decrease) each of cash and cash equivalents, additional paid-in capital, total stockholders’ deficit and total capitalization on a pro forma as adjusted basis by approximately $,

assuming that the assumed initial price to the public remains the same, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses. The pro forma as adjusted information discussed above is illustrative only and will adjust based on the actual initial price to the public and other terms of this offering determined at pricing.

The outstanding share information in the table above excludes as of December 31, 2018:

- 11,144,996 shares of common stock issuable upon the exercise of stock options outstanding as of December 31, 2018 under the 2017 Plan at a weighted average exercise price of $0.19 per share;
- 3,523,383 shares of common stock available for future issuance as of December 31, 2018 under our 2017 Plan; and
- shares of common stock reserved for issuance under the 2019 Plan which will become effective in connection with this offering.

Dilution

If you invest in our common stock in this offering, you will experience immediate and substantial dilution in the pro forma as adjusted net tangible book value of your shares of common stock. Dilution in pro forma as adjusted net tangible book value represents the difference between the assumed initial price to the public per share of our common stock and the pro forma as adjusted net tangible book value per share of our common stock immediately after this offering.

Net tangible book value per share represents our total tangible assets less total liabilities divided by the number of shares of outstanding common stock. Outstanding common stock includes 24,956,808 shares of common stock outstanding as of December 31, 2018 plus 18,901,041 shares of unvested restricted stock, which are not included as issued and outstanding for accounting purposes and are not included in our consolidated financial statements. The historical net tangible book value of our common stock as of December 31, 2018 was $134.0 million, or $3.06 per share. Our pro forma net tangible book value as of December 31, 2018 was $ or $ per share, based on the total number of shares of our common stock outstanding as of December 31, 2018. Pro forma net tangible book value, before the issuance and sale of shares in this offering, gives effect to the automatic conversion of the outstanding redeemable convertible preferred stock into an aggregate of 130,616,784 shares of common stock immediately prior to the closing of this offering, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus.

After giving effect to our sale of shares of common stock in this offering at an assumed initial public offering price $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of December 31, 2018 would have been approximately $, or $ per share. This represents an immediate increase in pro forma as adjusted net tangible book value of $ per share to existing stockholders and an immediate dilution of $ per share to investors participating in this offering.

The following table illustrates this dilution on a per share basis to new investors:

Assumed initial public offering price per share		$
Historical net tangible book value per share of common stock as of December 31, 2018	$3.06	
Increase per share in net tangible book deficit per share of common stock attributable to pro forma adjustments		
Pro forma net tangible book value per share of common stock as of December 31, 2018		
Increase in net tangible book value per share of common stock attributable to this offering		
Pro forma as adjusted net tangible book value per share of common stock after this offering		
Dilution per share of common stock to new investors participating in this offering		$

Each $1.00 increase (decrease) in the assumed initial price to the public of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted net tangible book value by approximately $, or approximately $ per share, and increase (decrease) the dilution per share to investors participating in this offering by approximately $ per share, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses. We may also increase or decrease the number of shares we are offering. An increase of

1,000,000 in the number of shares offered by us would increase the pro forma as adjusted net tangible book value by approximately $, or $ per share, and the dilution per share to investors participating in this offering would be $ per share, assuming that the assumed initial price to the public remains the same, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses. Similarly, a decrease of 1,000,000 shares in the number of shares offered by us would decrease the pro forma as adjusted net tangible book value by approximately $, or $( ) per share, and the dilution per share to investors participating in this offering would be $ per share, assuming that the assumed initial price to the public remains the same, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses. The pro forma as adjusted information discussed above is illustrative only and will adjust based on the actual initial price to the public and other terms of this offering determined at pricing.

If the underwriters exercise in full their option to purchase additional shares of common stock from us in this offering, our pro forma as adjusted net tangible book value per share after the offering would be $, and the dilution per share to new investors would be $, in each case assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The following table summarizes, on the pro forma as adjusted basis as of December 31, 2018, the differences between the number of shares of common stock purchased from us, the total consideration and the weighted-average price per share paid by existing stockholders and by investors participating in this offering.

	Shares purchased		Total consideration		
	Common and preferred				
	Number	Percent	Amount	Percent	Average price per share
Existing stockholders	163,166,236	%	$185,584,061	%	$ 1.14
New investors		%		%	
Total		100.0%	$	100.0%	$

In addition, if the underwriters' option to purchase additional shares is exercised in full, the number of shares held by existing stockholders will be reduced to % of the total number of shares of common stock to be outstanding upon completion of this offering, and the number of shares of common stock held by investors participating in this offering will be further increased to of the total number of shares of common stock to be outstanding upon completion of the offering.

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share would increase (decrease) total consideration paid by new investors by approximately $, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same. We may also increase or decrease the number of shares we are offering. An increase (decrease) of 1,000,000 in the number of shares offered by us would increase (decrease) total consideration paid by new investors by $, assuming that the assumed initial price to the public remains the same.

The outstanding share information in the tables above excludes:

- 11,144,996 shares of common stock issuable upon the exercise of stock options outstanding as of December 31, 2018 under the 2017 Plan at a weighted average exercise price of $0.19 per share;
- 3,523,383 shares of common stock available for future issuance as of December 31, 2018 under our 2017 Plan; and
- shares of common stock reserved for issuance under the 2019 Plan which will become effective in connection with this offering.

Furthermore, we may choose to raise additional capital through the sale of equity or convertible debt securities due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. New investors will experience further dilution if any of our outstanding options are exercised, new options are issued and exercised under our equity incentive plans or we issue additional shares of common stock, other equity securities or convertible debt securities for lower consideration per share than in this offering in the future.

Selected financial data

The following tables set forth, for the periods and as of the dates indicated, our selected historical financial data. The statements of operations data for the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017 have been derived from our audited consolidated financial statements included elsewhere in this prospectus. You should read this data together with our consolidated financial statements and related notes included elsewhere in this prospectus and the information under the caption "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and notes thereto included elsewhere in this prospectus. Our historical results are not necessarily indicative of our future results.

	Year ended December 31, 2018	Period from January 25, 2017 (Inception) through December 31, 2017
	(in thousands, except per share data)	
Consolidated Statement of Operations and Other Comprehensive Loss Data:		
Operating expenses:		
Research and development	$ 33,873	$ 5,859
General and administrative	11,868	2,021
Total operating expenses	45,741	7,880
Loss from operations	(45,741)	(7,880)
Other income (expense):		
Loss on issuance of preferred stock in connection with Blink Merger(1)	(49,500)	—
Loss on issuance of preferred stock to investors	(5,715)	—
Change in fair value of derivative liabilities	(11,749)	(500)
Change in fair value of preferred stock tranche liabilities	(4,325)	404
Other expense	—	(26)
Interest income	292	—
Total other income (expense)	(70,997)	(122)
Net loss and other comprehensive loss	$ (116,738)	$ (8,002)
Net loss per common share attributable to common stockholders, basic and diluted(2)	$ (9.04)	$ (8.36)
Weighted-average common shares used in net loss per share attributable stockholders outstanding, basic and diluted	12,977,480	1,159,283

(in thousands)	As of December 31, 2018
Balance Sheet Data:	
Cash and cash equivalents	$ 146,443
Working capital(3)	122,688
Total assets	167,012
Redeemable convertible preferred stock	251,434
Total stockholders' deficit	(117,406)

(1) See Note 8 to our consolidated financial statements included elsewhere in the prospectus for a description of the Blink Merger.

(2) See Note 12 to our consolidated financial statements included elsewhere in this prospectus for a description of the method used to calculate basic and diluted net loss per share.

(3) We define working capital as current assets less current liabilities.

Management's discussion and analysis of financial condition and results of operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and the related notes to those statements included elsewhere in this prospectus. In addition to historical financial information, the following discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. Some of the numbers included herein have been rounded for the convenience of presentation. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of many factors, including those discussed under "Risk Factors" and elsewhere in this prospectus.

Overview

We are a biotechnology company committed to creating a new class of precision genetic medicines, based on our proprietary base editing technology, with a vision of providing life-long cures to patients suffering from serious diseases.

Our proprietary base editing technology potentially enables an entirely new class of precision genetic medicines that targets a single base in the genome without making a double-stranded break in the DNA. This approach uses a chemical reaction designed to create precise, predictable and efficient genetic outcomes at the targeted sequence, which we believe will dramatically increase the impact of gene editing for a broad range of therapeutic applications. We believe we will be able to rapidly advance our portfolio of novel base editing programs by building on the significant recent advances in the field of genetic medicines.

Our novel base editors have two principal components that are fused together to form a single protein: (i) a CRISPR protein bound to a guide RNA, that leverages the established DNA-targeting ability of CRISPR, but modified to not cause a double-stranded break, and (ii) a base editing enzyme, such as a deaminase, which carries out the desired chemical modification of the target DNA base.

For the majority of our 12 programs, we have demonstrated base editing of cells *in vitro* at therapeutically relevant levels, which we believe has the potential to be disease-modifying for each disease. We have also successfully demonstrated feasibility of base editing with each of our three delivery modalities in relevant cell types (electroporation and AAV) and *in vivo* in mice (LNP).

We expect to achieve preclinical proof-of-concept *in vivo*, which would include engraftment of ex vivo base edited human cells in mice or base editing with AAV or LNP in non-human primates, for multiple programs in 2020. If successful, this will allow us to initiate investigational new drug, or IND, enabling studies for multiple programs beginning in 2020, potentially leading to an initial wave of IND filings beginning in 2021.

We were incorporated on January 25, 2017 and commenced operations shortly thereafter. Since our inception, we have devoted substantially all of our resources to building our base editing platform and advancing development of our portfolio of programs, establishing and protecting our intellectual property, conducting research and development activities, organizing and staffing our company, business planning, raising capital and providing general and administrative support for these operations. To date, we have financed our operations primarily through the sales of our Series A-1 redeemable convertible preferred stock, or the Series A-1 Preferred Stock, Series A-2 redeemable convertible preferred stock, or the Series A-2 Preferred Stock, and Series B redeemable convertible preferred stock, or the Series B Preferred Stock and, together with the Series A-1 Preferred Stock and the Series A-2 Preferred Stock, the Preferred Stock. Through December 31, 2018, we raised approximately $185.6 million and as of June 30, 2019 we have raised an aggregate of $223.6 million from the sale of our Preferred Stock.

On May 9, 2018, we entered into a merger option agreement with Blink Therapeutics Inc., or Blink. In September 2018, we exercised our option to acquire Blink, or the Blink Merger, and Blink thereafter became our wholly-owned subsidiary. Blink held rights to certain intellectual property related to RNA-based editing. Pursuant to the Blink Merger, we issued two shares of our Series A-2 Preferred Stock for each share of redeemable convertible series A preferred stock of Blink, and we issued two shares of our common stock for each share of Blink common stock. We began consolidating Blink on May 9, 2018.

We are a development stage company, and all of our programs are at a preclinical stage of development. To date, we have not generated any revenue from product sales and do not expect to generate revenue from the sale of products for the foreseeable future. Since inception we have incurred significant operating losses. Our net losses for the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017 were $116.7 million and $8.0 million, respectively. As of December 31, 2018, we have an accumulated deficit of $124.7 million.

Our total operating expenses were $45.7 million and $7.9 million for the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017. We expect to continue to incur significant expenses and increasing operating losses in connection with ongoing development activities related to our portfolio of programs as we continue our preclinical development of product candidates; advance these product candidates toward clinical development; further develop our base editing platform; research activities as we seek to discover and develop additional product candidates; maintenance, expansion enforcement, defense, and protection of our intellectual property portfolio; and hiring research and development, clinical and commercial personnel. In addition, upon the closing of this offering, we expect to incur additional costs associated with operating as a public company.

As a result of these anticipated expenditures, we will need additional financing to support our continuing operations and pursue our growth strategy. Until such time as we can generate significant revenue from product sales, if ever, we expect to finance our operations through a combination of equity offerings, debt financings, collaborations, strategic alliances, and licensing arrangements. We may be unable to raise additional funds or enter into such other agreements when needed on favorable terms or at all. Our inability to raise capital as and when needed would have a negative impact on our financial condition and our ability to pursue our business strategy. We will need to generate significant revenue to achieve profitability, and we may never do so.

We expect that our existing cash resources, together with anticipated net proceeds from the offering, will enable us to fund our current and planned operating expenses and capital expenditures for at least the next . We have based these estimates on assumptions that may prove to be imprecise, and we may exhaust our available capital resources sooner that we currently expect. See “—Liquidity and Capital Resources.” Because of the numerous risks and uncertainties associated with the development our programs, we are unable to estimate the amounts of increased capital outlays and operating expenses associated with completing the research and development of our product candidates.

Components of our results of operations

Operating expenses

Research and development expenses

Research and development expenses consist of costs incurred in performing research and development activities, which include:

- the cost to obtain licenses to intellectual property, such as those with Harvard, Broad and Editas, and related future payments should certain, success, development and regulatory milestones be achieved;

- personnel-related expenses, including salaries, bonuses, benefits and stock-based compensation for employees engaged in research and development functions;
- expenses incurred in connection with the discovery and preclinical development of our research programs, including under agreements with third parties, such as consultants, contractors and contract research organizations;
- the cost of developing and validating our manufacturing process for use in our preclinical studies and future clinical trials;
- laboratory supplies and research materials; and
- facilities, depreciation and other expenses which include direct and allocated expenses.

We expense research and development costs as incurred. Advance payments that we make for goods or services to be received in the future for use in research and development activities are recorded as prepaid expenses. The prepaid amounts are expensed as the benefits are consumed.

In the early phases of development, our research and development costs are often devoted to product platform and proof-of-concepts studies that are not necessarily allocable to a specific target, therefore, we have not yet begun tracking our expenses on a program-by-program basis.

We expect that our research and development expenses will increase substantially in connection with our planned preclinical and future clinical development activities.

General and administrative expenses

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation for personnel in our executive, intellectual property, business development, and administrative functions. General and administrative expenses also include legal fees relating to intellectual property and corporate matters, professional fees for accounting, auditing, tax and consulting services, insurance costs, travel, and direct and allocated facility related expenses and other operating costs.

We anticipate that our general and administrative expenses will increase in the future to support increased research and development activities. We also expect to incur increased costs associated with being a public company, including costs of accounting, audit, legal, regulatory and tax-related services associated with maintaining compliance with Nasdaq and SEC requirements, director and officer insurance costs, and investor and public relations costs.

Loss on issuance of preferred stock in connection with Blink Merger

Loss on issuance of preferred stock in connection with the Blink Merger represents the expense recognized upon the consummation of the Blink Merger. Pursuant to the Blink Merger, we issued two shares of our Series A-2 Preferred Stock for each share of Blink and took a charge representing the excess of the fair value of our Series A-2 Preferred Stock issued to Blink shareholders over the value of the Blink preferred stock exchanged by Blink shareholders.

Loss on issuance of preferred stock to investors

Loss on issuance of preferred stock to investors consists of a charge taken upon issuance of our Series A-2 Preferred Stock at a discount due to an increase in value above the sale price.

Change in fair value of derivative liabilities

Change in fair value of derivative liabilities consist primarily of remeasurement gains or losses associated with changes in the anti-dilution issuance rights, finance milestone payment liabilities and success payment liabilities associated with our license agreement with Harvard, dated as of June 27, 2017, as amended, or the Harvard License Agreement, and the license agreement between Blink and Broad, as amended, dated as of May 9, 2018, or the Broad License Agreement.

Anti-dilution issuance rights were issued to Harvard and Broad allowing Harvard and Broad to maintain a defined ownership percentage in us on a fully diluted basis upon subsequent equity financings until we achieved a defined aggregate level of preferred stock financing. At the inception of the agreements, the liability for the anti-dilution right was recorded at fair value with cost recorded as research and development expense, and was remeasured at each reporting period and at the termination of the right with changes recorded in other income (expense).

Financing milestone payment liabilities are derived from future cash payments due to Harvard and Broad upon the closing of additional rounds of Preferred Stock. At the inception of the agreements, the liabilities were recorded at fair value with cost recorded as research and development expense, and was remeasured at each reporting period with charges recorded in other income (expense).

Success payment liabilities are derived from future increases in the per share fair market value of the Series A-1 Preferred Stock and Series A-2 Preferred Stock at specified future dates. At inception of the agreements, the success payment liabilities were recorded at fair market value and remeasured at each reporting period with charges recorded in other income (expense). Depending on our valuation, the success payment liabilities could fluctuate significantly from period to period.

All anti-dilution issuance rights and finance milestone liabilities pursuant to our Harvard License Agreement and Broad License Agreement have been met as of December 31, 2018. Accordingly, we are no longer required to record liabilities for these rights.

Change in fair value of preferred stock tranche liabilities

Change in fair value of preferred stock tranche liabilities consist primarily of remeasurement gains or losses associated with changes in the fair value of the tranche rights associated with our Series A-1 Preferred Stock and Series A-2 Preferred Stock. All obligations have been met at December 31, 2018 and therefore there will be no further remeasurement.

Results of operations

Comparison of year ended December 31, 2018 and period ended December 31, 2017

	Year ended December 31, 2018	Period from January 25, 2017 (Inception) to December 31, 2017	Change
		(in thousands)	
Operating expenses:			
Research and development	$ 33,873	$ 5,859	$ 28,014
General and administrative	11,868	2,021	9,847
Total operating expenses	45,741	7,880	37,861
Other income (expense):			
Loss on issuance of preferred stock in connection with Blink Merger	(49,500)	—	(49,500)
Loss on issuance of preferred stock to investors	(5,715)	—	(5,715)
Change in fair value of derivative liabilities	(11,749)	(500)	(11,249)
Change in fair value of preferred stock tranche liabilities	(4,325)	404	(4,729)
Other expense	—	(26)	26
Interest income	292	—	292
Total other income (expense)	(70,997)	(122)	(70,875)
Net loss	$ 116,738	$ 8,002	$108,736

Research and development expenses

Research and development expenses were $33.9 million for the year ended December 31, 2018, compared to $5.9 million for the period from January 25, 2017 (Inception) to December 31, 2017. The increase of $28.0 million was primarily due to the following:

- An $8.5 million increase in expenses related to technology licenses. In 2018, technology license expense included: $5.3 million related to the Broad License Agreement for the initial value of anti-dilution rights, financing milestone payment liabilities, success payment liabilities, and the initial shares of common stock issued to Broad, $2.2 million related to the issuance of 1,840,000 additional shares of Beam common stock to Broad in connection with the Blink Merger, $3.7 million related to the issuance of 3,055,555 shares of Preferred Stock under a license agreement with Editas; and other technology license expenses of $2.0 million. In 2017, technology license expenses included $4.8 million related to the Harvard License Agreement for the initial value of anti-dilution rights, financing milestone payment liabilities, success payment liabilities, and the initial shares of common stock issued to Harvard. These amounts were recorded as research and development expenses as they are considered compensation for the respective license agreements.
- Increases of $5.9 million in lab supplies and outsourced services, $4.4 million in personnel-related costs, and $3.2 million in facility-related costs, including depreciation. These increases were due to the growth in the number of research and development employees from four at December 31, 2017 to 40 at December 31, 2018, and their related activities, as well as the expense allocated to research and development related to our new leased facility.
- An increase of $5.7 million in stock compensation, including $3.6 million of expense representing the difference in value of the fully vested shares issued to the scientific founders of Blink and the value exchanged by the Blink shareholders at the time of the Blink Merger. The remainder of the increase was due

to the increase in the number of research and development employees from December 31, 2017 to December 31, 2018.

Research and development expenses will continue to increase as we continue our current research programs, initiate new research programs, continue our preclinical development of product candidates and conduct future clinical trials for any of our product candidates.

General and administrative expenses

General and administrative expenses were $11.9 million for the year ended December 31, 2018, compared to $2.0 million for the period from January 25, 2017 (Inception) ended December 31, 2017. The increase of $9.8 million was primarily due to an increase in legal and patent costs of $4.3 million associated with establishing our patent portfolio, $1.7 million increase in personnel related costs due to an increase in general and administrative employees from one employee as of December 31, 2017 to eight employees as of December 31, 2018, $1.3 million increase in consulting services to supplement our internal capabilities, $1.1 million increase in stock-based compensation, and an increase in expense allocated to general and administrative expense related to our new leased facility, including depreciation of $0.7 million to support the growing organization.

Loss on issuance of preferred stock in connection with Blink Merger

Loss on issuance of preferred stock in connection with the Blink Merger consists of a $49.5 million charge for the year ended December 31, 2018 related to the Blink Merger. This charge represented the excess of the fair value of our Series A-2 Preferred Stock issued to Blink shareholders over the value of the Blink preferred stock exchanged by Blink shareholders at the time of the Blink Merger.

Loss on issuance of preferred stock to investors

Loss on issuance of preferred stock to investors consisted of a $5.7 million discount for the year ended December 31, 2018, resulted from issuance of our Series A-2 Preferred Stock due to the fair value of the preferred stock issued being in excess of the cash proceeds received.

Change in fair value of derivative liabilities

During the year ended December 31, 2018, the anti-dilution rights related to the Harvard License Agreement and the Broad License Agreement have terminated and, during the year ended December 31, 2018 we issued 3,432,955 shares of our common stock and Blink issued 920,000 shares of its common stock (which was converted into 1,840,000 shares of our common stock in connection with the Blink Merger) to Harvard and Broad, respectively. In 2018, we recorded a $1.3 million change in fair value expense related to the anti-dilution issuance right as compared to no change in fair value expense in 2017.

In 2018, we recorded a $9.7 million change in fair value expense related to the financial milestone payment as compared to a $0.4 million expense in 2017. All remaining financing milestone obligations have been met in 2018, and we recorded a $13.8 million financing milestone liability for any unpaid balances on our consolidated balance sheets as of December 31, 2018.

In 2018, we recorded a $0.7 million change in fair value expense related to the success payment liabilities as compared to a $0.1 million expense in 2017. The increase was a result of an increase in our valuation from December 31, 2017 to December 31, 2018.

Change in fair value of preferred stock tranche liabilities

We have determined that our obligation to issue and our investors' obligation to purchase additional shares of Series A-1 Preferred Stock and Series A-2 Preferred Stock represented a freestanding financial instrument. The resulting preferred stock tranche liability was initially recorded at fair value, with gains and losses arising from changes in fair value recognized in the statement of operations at each period while such instruments were outstanding. As a result of the changes in fair value, we recognized other expense of $4.3 million for the year ended December 31, 2018, compared to $0.4 million in other income for the period from January 25, 2017 (Inception) to December 31, 2017. As of December 31, 2018, the tranche rights have been exercised and the liabilities have been reclassified to preferred stock.

Interest income

Interest income was $0.3 million in 2018 due our investment in money market funds. There were no investments in 2017.

Liquidity and capital resources

Since our inception in January 2017, we have incurred significant operating losses. We expect to incur significant expenses and operating losses for the foreseeable future as we advance the preclinical and, if successful, the clinical development of our programs. To date, we have funded our operations primarily with proceeds from the sales of Preferred Stock. Through December 31, 2018, we raised an aggregate of $185.6 million in gross proceeds from sales of our Preferred Stock. As of December 31, 2018, we had $146.4 million in cash and cash equivalents.

Cash flows

The following table summarizes our sources and uses of cash for the year ended December 31, 2018 and period from January 25, 2017 (Inception) to December 31, 2017.

	Year ended December 31, 2018	Period from January 25, 2017 (Inception) to December 31, 2017
		(in thousands)
Cash used in operating activities	$ (20,298)	$ (2,707)
Cash used in investing activities	(13,424)	(346)
Cash provided by financing activities	179,727	4,984
Net increase in cash and cash equivalents	$ 146,005	$ 1,931

Operating activities

Net cash used in operating activities for the year ended December 31, 2018 was $20.3 million, consisting primarily of our net loss of $116.7 million offset by the following noncash charges; loss on issuance of preferred stock in connection with the Blink Merger of $49.5 million, change in fair value of derivatives consisting of anti-dilution rights, financial milestone payment liabilities and success payment liabilities of $11.7 million, non-cash research license expense of $7.4 million, loss on issuance of preferred stock to investors of $5.7 million, change in fair value of preferred stock tranche liabilities of $4.3 million, and stock-based

compensation of $7.0 million, as well as increases in deferred rent liability of $7.6 million due to the lease of a new facility in 2018 and increases in accounts payable and accrued expenses of $4.0 million due to the growth of the company.

Net cash used in operating activities for the period from January 25, 2017 (Inception) to December 31, 2017 was $2.7 million, consisting primarily of our net loss of $8.0 million partially offset by non-cash charges of $4.6 million primarily consisting of a non-cash research and development license expense of $4.3 million associated with our Harvard License Agreement; and increases in accounts payable and accrued expenses of $0.9 million.

Investing activities

For the year ended December 31, 2018 and period from January 25, 2017 (Inception) to December 31, 2017, cash used in investing activities consisted primarily of purchases of property and equipment of $13.1 million and $0.3 million, respectively.

Financing activities

Net cash provided by financing activities for the year ended December 31, 2018 was $179.7 million, consisting of the net proceeds from the issuance of Series A-1 Preferred Stock of $19.8 million, net proceeds from the issuance of Series A-2 Preferred Stock of $48.5 million, net proceeds from the issuance of Blink Series A Preferred Stock of $14.9 million and net proceeds from the issuance of Series B Preferred Stock of $96.5 million, net of issuance costs.

Net cash provided by financing activities for the period from January 25, 2017 (Inception) to December 31, 2017 was $5.0 million consisting of net proceeds from the first tranche of the issuance of Series A-1 Preferred Stock.

Funding requirements

Our operating expenses are expected to increase substantially as we continue to advance our portfolio of programs.

Specifically, our expenses will increase if and as we:

- continue our current research programs and our preclinical development of product candidates from our current research programs;
- seek to identify additional research programs and additional product candidates;
- initiate preclinical testing and clinical trials for any product candidates we identify and develop;
- maintain, expand, enforce, defend, and protect our intellectual property portfolio and provide reimbursement of third-party expenses related to our patent portfolio;
- seek marketing approvals for any of our product candidates that successfully complete clinical trials;
- ultimately establish a sales, marketing, and distribution infrastructure to commercialize any medicines for which we may obtain marketing approval;
- further develop our base editing platform;
- hire additional personnel including research and development, clinical and commercial personnel;
- add operational, financial, and management information systems and personnel, including personnel to support our product development;

- acquire or in-license products, intellectual property, medicines and technologies;
- should we decide to do so, build and maintain a commercial-scale current Good Manufacturing Practices, or cGMP, manufacturing facility; and
- operate as a public company.

We expect that these our existing cash resources, together with anticipated net proceeds from the offering, will enable us to fund our current and planned operating expenses and capital expenditures for at least the next months. We have based these estimates on assumptions that may prove to be imprecise, and we may exhaust our available capital resources sooner that we currently expect. Because of the numerous risks and uncertainties associated with the development our programs, we are unable to estimate the amounts of increased capital outlays and operating expenses associated with completing the research and development of our product candidates.

Our future funding requirements will depend on many factors including:

- the cost of continuing to build our base editing platform;
- the costs of acquiring licenses for the delivery modalities that will be used with our product candidates;
- the scope, progress, results, and costs of discovery, preclinical development, laboratory testing, manufacturing and clinical trials for the product candidates we may develop;
- the costs of preparing, filing, and prosecuting patent applications, maintaining and enforcing our intellectual property and proprietary rights, and defending intellectual property-related claims;
- the costs, timing, and outcome of regulatory review of the product candidates we may develop;
- the costs of future activities, including product sales, medical affairs, marketing, manufacturing, distribution, coverage and reimbursement for any product candidates for which we receive regulatory approval;
- the success of our license agreements and our collaborations;
- our ability to establish and maintain additional collaborations on favorable terms, if at all;
- the achievement of milestones or occurrence of other developments that trigger payments under any additional collaboration agreements we obtain;
- the extent to which we acquire or in-license products, intellectual property, and technologies; and
- the costs of operating as a public company.

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances, and licensing arrangements. We do not have any committed external source of funds. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, or declaring dividends.

If we raise funds through additional collaborations, strategic alliances, or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs, or product candidates, or we may have to grant licenses on terms that may not be favorable to us. If

we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce, or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Contractual Obligations

The following is a summary of our significant contractual obligations as of December 31, 2018:

		Payments due by period			
Contractual obligation	Total	Less than 1 year	More than 1 year and less than 3	More than 3 years and less than 5	More than 5 years
(in thousands)					(in thousands)
Operating lease obligation(1)	$35,202	$ 3,699	$ 7,367	$ 6,660	$ 17,476
License obligations(2)	$13,750	$ 13,750	$ —	$ —	$ —

(1) Represents future minimum lease payments under our operating lease for office and lab space in Cambridge, Massachusetts that expires in September 2028. We have the option to extend for one five year term.

(2) In 2019, we settled the financing milestone obligations under our licensing agreements with Harvard and Broad in cash.

The table above does not include potential milestone and success fees, sublicense fees, royalty fees, licensing maintenance fees, and reimbursement of patent maintenance costs that we may be required to pay under agreements we have entered into with certain institutions to license intellectual property. Our agreements to license intellectual property include potential milestone payments that are dependent upon the development of products using the intellectual property licensed under the agreements and contingent upon the achievement of development or regulatory approval milestones, as well as commercial and success payment milestones. We have not included such potential obligations in the table above because they are contingent upon the occurrence of future events and the timing and likelihood of such potential obligations are not known with certainty.

We enter into contracts in the normal course of business with contract research organizations and other vendors to assist in the performance of our research and development activities and other services and products for operating purposes. These contracts generally provide for termination on notice, and therefore are cancelable contracts and not included in the table of contractual obligations and commitments.

Off-balance sheet arrangements

We did not have during the periods presented and we do not currently have, any off-balance sheet arrangements, as defined under the applicable regulations of the SEC.

Critical accounting policies and significant judgements

Our management's discussion and analysis of our financial condition and results of operations is based on our financial statements, which we have prepared in accordance with U.S. generally accepted accounting principles. The preparation of these financial statements requires us to make estimates, judgments and assumptions that affect the reported amounts of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities in our financial statements. We base our estimates on historical experience, known trends and events and various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in Note 2 to our consolidated financial statements appearing at the end of this prospectus, we believe that the following accounting policies are those most critical to the judgments and estimates used in the preparation of our financial statements.

Stock-based compensation

We measure stock options and other stock-based awards granted to employees, directors, consultants or founders of the company based upon their fair value on the date of the grant and recognize stock-based compensation expense over the requisite service period, which is generally the vesting period of the respective award. We recognize forfeitures as they occur.

The stock-based compensation awards are subject to either service or performance-based vesting conditions. We apply the straight-line method of expense recognition to all awards with service based vesting and recognize stock-based compensation for performance awards based on grant date fair value over the service period using the accelerated attribution method to the extent achievement of the of performance condition is probable.

We estimate the fair value of each stock option grant on the date of grant using the Black-Scholes option-pricing model, which uses inputs such as the fair value of our common stock, assumptions we make for the volatility of our common stock, the expected term of our stock options, the risk-fee interest rate for a period the approximates the expected term of our stock options and our expected dividend yield. The fair value of our common stock is used to determine the fair value of restricted stock awards.

Determination of the fair value of our common stock

As there has been no public market for our common stock to date, the estimated fair value of our common stock has been determined by our board of directors as of the date of each option grant, with input from management, considering our most recently available third-party valuations of common stock and our board of directors' assessment of additional objective and subjective factors that it believed were relevant and which may have changed from the date of the most recent valuation through the date of the grant. Third party valuations were performed in accordance with the framework of the American Institute of Certified Public Accountants*, Valuation of Privately-Held Company Equity Securities Issued as Compensation*. Our common stock valuations were prepared using either an option pricing method, or OPM, or a hybrid method of the probability-weighted expected return method, or PWERM, both of which used market approaches to estimate our enterprise value. The OPM treats common stock and preferred stock as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a company's securities changes. Under this method, the common stock has value only if the funds available for distribution to stockholders exceeded the value of the preferred stock liquidation preferences at the time of the liquidity event, such as a strategic sale or a merger. The common stock is modeled as a call option on the underlying equity value at a predetermined exercise price. In the model, the exercise price is based on a comparison with the total equity value rather than, as in the case of a regular call option, a comparison with a per share stock price. Thus, common stock is considered to be a call option with a claim on the enterprise at an exercise price equal to the remaining value immediately after the preferred stock liquidation preference is paid. A discount for lack of marketability of the common stock is then applied to arrive at an indication of value for the common stock. The hybrid method is a probability-weighted expected return method, where the equity value in one or more scenarios is calculated using an OPM. The PWERM is a scenario-based methodology that estimates the fair value of common stock based upon an analysis of future values for the company, assuming various outcomes. The common stock value is based on the probability-weighted present value of expected future investment returns considering each of the possible outcomes available as

well as the rights of each class of stock. The future value of the common stock under each outcome is discounted back to the valuation date at an appropriate risk-adjusted discount rate and probability weighted to arrive at an indication of value for the common stock. These third-party valuations were performed at various dates, which resulted in valuations of our common stock of $0.11 per share as of June 30, 2017, $0.15 per share as of March 26, 2018, $0.23 per share as of June 11, 2018, $0.90 per share as of September 25, 2018, and $0.94 per share as of December 1, 2018. In addition to considering the results of these third-party valuations, our board of directors considered various objective and subjective factors to determine the fair value of our common stock as of each grant date including:

- prices at which we sold shares of Preferred Stock and the superior rights and preferences of the Preferred Stock relative to our common stock at the time of each grant;
- the progress of our research and development programs, including the status and results of preclinical studies for our product candidates;
- our stage of development and our business strategy and the material risks related to our business and industry;
- external market conditions affecting the biopharmaceutical industry and the material risks related to our business and industry; and trends within the biopharmaceutical industry;
- our financial position, including cash on hand, and our historical and forecasted performance and operating results;
- the lack of an active public market for our common stock and our Preferred Stock;
- the likelihood of achieving a liquidity event, such as an initial public offering, or IPO, or sale of our company in light of prevailing market conditions; and
- the analysis of IPOs and the market performance of similar companies in the biopharmaceutical industry.

The assumptions underlying these valuations represent management's best estimates, which involve inherent uncertainties and the application of management judgement. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our stock-based compensation could be materially different.

Following the closing of this offering, the fair value of our common stock will be determined based on the quoted market price of our common stock.

Awards granted

The following table summarized by grant date the number of shares subject to options and restricted common stock awards granted from January 25, 2017 (Inception) to December 31, 2018, the per share exercise price of options or value of restricted stock, the per share fair value of the common stock on each grant date and the per share estimated value of awards on each grant date.

Grant date	Type of award	Per share exercise price of options or value of restricted stock	Per share fair value of common stock on grant date	Number of shares underlying grant	Per share estimated value of award on grant date
May 8, 2017	Restricted Stock	$ 0.01	$ 0.01	17,045,455	$ 0.11
August 17, 2017	Restricted Stock	$ 0.11	$ 0.11	1,072,727	$ 0.11
August 17, 2017	Stock Options	$ 0.11	$ 0.11	129,545	$ 0.07
December 13, 2017	Stock Options	$ 0.11	$ 0.11	410,099	$ 0.07
January 8, 2018	Restricted Stock	$ 0.11	$ 0.11	3,815,647	$ 0.11
March 1, 2018	Stock Options	$ 0.15	$ 0.15	75,000	$ 0.11
March 1, 2018	Restricted Stock	$ 0.15	$ 0.15	1,742,423	$ 0.15
May 8, 2018	Stock Options	$ 0.15	$ 0.15	4,590,909	$ 0.11
July 13, 2018	Stock Options	$ 0.23	$ 0.23	4,188,225	$ 0.17
September 7, 2018	Restricted Stock	$ 0.23	$ 0.90(1)	151,515	$ 0.90
September 13, 2018	Stock Options	$ 0.23	$ 0.90(1)	1,827,800	$ 0.79
September 25, 2018	Restricted Stock	$ 0.23	$ 0.90(1)	7,997,066	$ 0.90
				43,046,411	

(1) In June 2019, we preformed a retrospective fair value assessment and concluded that the fair value of our common stock underlying stock options that we granted in September 2018 was $0.90 per share for accounting purposes. This reassessed value was based in part, upon third-party valuations of our common stock prepared on this date on a retrospective basis. Third-party valuations were prepared using a hybrid approach, which considered an IPO scenario and trade sale scenarios to determine our enterprise value.

Variable interest entities

We review each legal entity formed by parties related to us to determine whether or not the entity is a Variable Interest Entity, or VIE. If the entity is a VIE, we assess whether or not we are the primary beneficiary of that VIE based on a number of factors, including (i) which party has the power to direct the activities that most significantly affect the VIE's economic performance, (ii) the parties' contractual rights and responsibilities pursuant to any contractual agreements and (iii) which party has the obligation to absorb losses or the right to receive benefits from the VIE. If we determine that we are the primary beneficiary of a VIE, we consolidate the financial statements of the VIE into our consolidated financial statements at the time that determination is made. On a quarterly basis we evaluate whether we continue to be the primary beneficiary of any consolidated VIEs. If we determine that we are no longer the primary beneficiary of a consolidated VIE, or no longer have a variable interest in the VIE, we deconsolidate the VIE in the period that the determination is made.

On March 22, 2018, certain of our investors, or the Primary Investors, formed Blink to hold certain intellectual property related to RNA base editing.

On May 9, 2018, we entered into a merger option agreement, or the Option Agreement, with Blink. On the same date, Blink entered into the Broad License Agreement, issued 5,000,000 shares of Blink series A preferred stock to its investors, the Initial Closing, at $1.00 per share, and issued restricted common stock to certain

scientific founders. As of the date of the Option Agreement, Beam and Blink were both owned by members of the same group or Primary Investors, having over 75% ownership in each entity, which consisted primarily of the our initial investors and scientific founders.

Under the Option Agreement, Blink granted us an option, exercisable on the date that Blink issued an aggregate of 10,000,000 additional shares of Blink series A preferred stock and ending on the second anniversary of such date, to consummate a merger with Blink in exchange for a $121,000 option premium. In connection with the Blink Merger, we issued two shares of our Series A-2 Preferred Stock for each share of Blink series A preferred stock and issued two shares of our common stock for each share of Blink common stock.

As of May 9, 2018, as a result of the design and purpose of Blink and the Option Agreement, we determined that Blink was a VIE and that we were the primary beneficiary, because we had both (1) the power to direct the activities of Blink that most significantly impacted Blink's economic performance and (2) the right to receive benefits from Blink that could be significant to Blink. As a result, we began consolidating Blink on May 9, 2018. The operating activity of Blink from its formation on March 22, 2018 to May 9, 2018 was immaterial. In August 2018, Blink issued 10,000,000 shares of Blink series A preferred stock at $1.00 per share to the Primary Investors and Beam paid the $121,000 option premium to exercise its option to merge with Blink. On September 25, 2018, or the Merger Date, the merger was consummated and Blink became a wholly owned subsidiary of Beam. We recognized expense for the excess in value of the Beam Series A-2 Preferred Stock and common stock exchanged for the Blink series A preferred stock and common stock, because the excess value was only transferred to certain investors of Beam and there were no other rights or privileges identified that require separate accounting as an asset.

Fair value measurements

Preferred stock tranche rights

We have determined that our obligation to issue, and our investors' obligation to purchase, additional shares of Series A-1 Preferred Stock pursuant to the second closing and Series A-2 Preferred Stock pursuant to the third closing represented a freestanding instrument. The resulting preferred stock tranche liability was initially recorded at fair value, with gains and losses arising from changes in fair value recognized in other income (expense) in the statement of operations. The preferred stock tranche liabilities were remeasured at each reporting period and upon the exercise or expiration of the obligation. The preferred stock tranche liabilities were valued using an option pricing model which utilized the fair value of the Preferred Stock, expected volatility, as well as the expected term. As of December 31, 2018, all redeemable convertible Series A-1 Preferred Stock and redeemable convertible Series A-2 Preferred Stock closings have occurred and all tranche liabilities have been remeasured and reclassified to Preferred Stock.

Anti-dilution issuance right

Additional shares of common stock were issued to Harvard and Broad upon equity financings allowing Harvard and Broad to maintain a defined ownership percentage in us on a fully diluted basis until we achieved a defined aggregate level of preferred stock financing. These anti-dilution issuance rights were accounted for under ASC 815, Derivatives and Hedging, and were initially recorded at fair value with a corresponding charge to research and development expense. As such, we recorded this instrument as a liability at its fair value with a corresponding amount recorded as research and development expense and marked it to market at each reporting period, with changes in fair value recognized in other income (expense) in the statement of operations at each period-end while this instrument was outstanding. The liability was valued using a Monte Carlo simulation model, which models the value of the liability based on the change of several key variables,

including the time to the capital raise, the probability of the capital raise, as well as the fair value of our common stock. During 2018, the anti-dilution rights were satisfied and there is no additional derivative liability accounting.

Financing milestone payments

We were required to make cash payments to Harvard and Broad upon the achievement of future financing milestones tied to the closing of additional rounds of Preferred Stock. The financing milestone payments were accounted for under ASC 815, Derivatives and Hedging, and were initially recorded at fair value with a corresponding charge to research and development expense. The liabilities were marked to market at each balance sheet date with all changes in value recognized in other income or expense in the statement of operations. We adjusted the liability for changes in fair value until the achievement of the financing milestones. To determine the estimated fair value of the financial milestone payments, we used a Monte Carlo simulation model, which models the value of the liability based on the change of several key variables, including time to capital raise, probabilities to capital raise, cost of debt, as well as the projected price per share upon issuance. As of December 31, 2018, all financing milestone payments have been achieved and were either paid in cash or are recorded in accrued expenses for actual amounts due.

Success payments

We are required to make success payments to Harvard and Broad based on increases in the per share fair market value of our Series A-1 Preferred Stock and Series A-2 Preferred Stock, payable in cash. The success payments are accounted for under ASC 815 and are initially recorded at fair value with a corresponding charge to research and development expense. The liabilities are marked to market at each balance sheet date with all changes in value recognized in other income (expense) in the statement of operations. We will continue to adjust the liability for changes in fair value until the earlier of the achievement or expiration of the success payment obligation. To determine the estimated fair value of the success payments, we used a Monte Carlo simulation model, which models the value of the liability based on several key variables, including probability of event occurrence, timing of event occurrence, as well as the price per share at the time of success payment.

Recently issued accounting pronouncements

The Jumpstart Our Business Startups Act of 2012 permits an emerging growth company to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies until those standards would otherwise apply to private companies. As an emerging growth company, we have elected to take advantage of this extended transition period.

In November 2016, the FASB issued ASU No. 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash, or ASU 2016-18, which requires that a statement of cash flows explain the change during the period in the total cash, cash equivalents and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning and ending balances shown on the statement of cash flows. We adopted ASU 2016-18 as of January 1, 2018 utilizing the retrospective transition method and it did not have a material impact on its consolidated statement of cash flows. As part of the adoption of this guidance, the we included restricted cash with cash and cash equivalents in the consolidated statement of cash flows for the periods ending December 31, 2018 and 2017.

In February 2016, the FASB issued ASU No. 2016-02, Leases, or ASU 2016-02. The new guidance requires lessees to record most leases on their balance sheets and recognize the related expenses on their income statements in

a manner similar to current practice. ASU 2016-02 states that a lessee would recognize a lease liability for the obligation to make lease payments and a right-to-use asset for the right to use the underlying asset for the lease term. The standard is effective for us for annual reporting periods beginning after December 15, 2019. Early adoption is permitted. In July 2018, an amendment was made that allows companies the option of using the effective date of the new standard as the initial application date (at the beginning of the period in which it is adopted, rather than at the beginning of the earliest comparative period.) The standard is effective for us on January 1, 2020. We plan to use the optional transition method allowed by ASU 2016-02. Under this method, the standard will be applied prospectively in the year of adoption. We are currently evaluating the effect of this standard on our consolidated financial statements.

Quantitative and qualitative disclosures about market risk

We are exposed to market risk related to changes in interest rates. As of December 31, 2018, we had cash and equivalents of $146.4 million, which consisted of cash and money market funds. Interest income is sensitive to change in the general level of interest rates, however, due to the short-term maturities of our cash equivalents and the low risk profile of our investments, an immediate 100 basis point change in interest rates would not have a material effect on the fair market value of our cash equivalents.

We are not currently exposed to significant market risk related to changes in foreign currency exchange rates; however, we do contract with vendors that are located outside of the United States and may be subject to fluctuations in foreign currency rates. We may enter into additional contracts with vendors located outside of the United States in the future, which may increase our foreign currency exchange risk.

JOBS Act

We qualify as an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. As an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies, including reduced disclosure about our executive compensation arrangements, exemption from the requirements to hold non-binding advisory votes on executive compensation and golden parachute payments and exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting.

We may take advantage of these exemptions until the last day of the fiscal year following the fifth anniversary of this offering or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company earlier if we have more than $1.07 billion in annual revenue, we have more than $700.0 million in market value of our stock held by non-affiliates (and we have been a public company for at least 12 months and have filed one annual report on Form 10-K) or we issue more than $1.0 billion of non-convertible debt securities over a three-year period. For so long as we remain an emerging growth company, we are permitted, and intend, to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. We may choose to take advantage of some, but not all, of the available exemptions.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected not to “opt out” of such extended transition period, which means that when a standard is issued or revised and it has different application dates for public or private companies, we will adopt the new or revised standard at the time private companies adopt the new or revised standard and will do so until such time that we either (i) irrevocably elect to “opt out” of such extended transition period or (ii) no longer qualify as an emerging growth company. Therefore, the reported results of operations contained in our consolidated financial statements may not be directly comparable to those of other public companies.

Business

Overview

We are a biotechnology company committed to creating a new class of precision genetic medicines based on our proprietary base editing technology, with a vision of providing life-long cures to patients suffering from serious diseases.

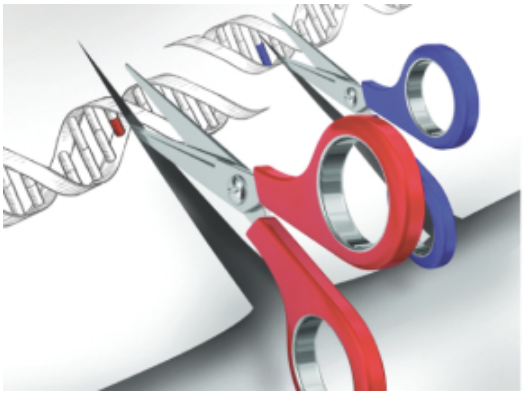
The most common class of genetic mutations are errors of a single base, known as point mutations, representing approximately 58% of all the known genetic errors associated with disease. Other natural genetic variations of a single base among human populations, revealed by population-level genomic studies, are known to protect against disease. To maximize the impact of these genetic insights, the ability to alter the human genome at the foundational level of genetic information – a single base – is crucial.

In the last decade, the field of genetic medicine has reached an inflection point, with groundbreaking advances in gene therapy, cell therapy, oligonucleotides, and, more recently, gene editing. While these technologies represent dramatic advancements for genetic medicines, the ability to edit genes at the single base level has been elusive. Existing gene editing technologies, such as CRISPR, Zinc Fingers, Arcuses, and TAL Nucleases, operate by creating a targeted double-stranded break in the DNA, and then rely on cellular mechanisms to complete the editing process. Such approaches can be effective in the disruption of gene expression; however, they lack control of the editing outcome, have low efficiency of precise gene correction, and can result in unwanted DNA modifications.

Our proprietary base editing technology potentially enables an entirely new class of precision genetic medicines that targets a single base in the genome without making a double-stranded break in the DNA. This approach uses a chemical reaction designed to create precise, predictable and efficient genetic outcomes at the targeted sequence, which we believe will dramatically increase the impact of gene editing for a broad range of therapeutic applications. We believe we will be able to rapidly advance our portfolio of novel base editing programs by building on the significant recent advances in the field of genetic medicine.

Our novel base editors have two principal components that are fused together to form a single protein: (i) a CRISPR protein, bound to a guide RNA, that leverages the established DNA-targeting ability of CRISPR, but modified to not cause a double-stranded break, and (ii) a base editing enzyme, such as a deaminase, which carries out the desired chemical modification of the target DNA base.

If existing gene editing approaches are “scissors” for the genome, our base editors are “pencils,” erasing and rewriting one letter in the gene.



CRISPR, Zinc Finger, Arcuses, TAL Nucleases

Base Editors

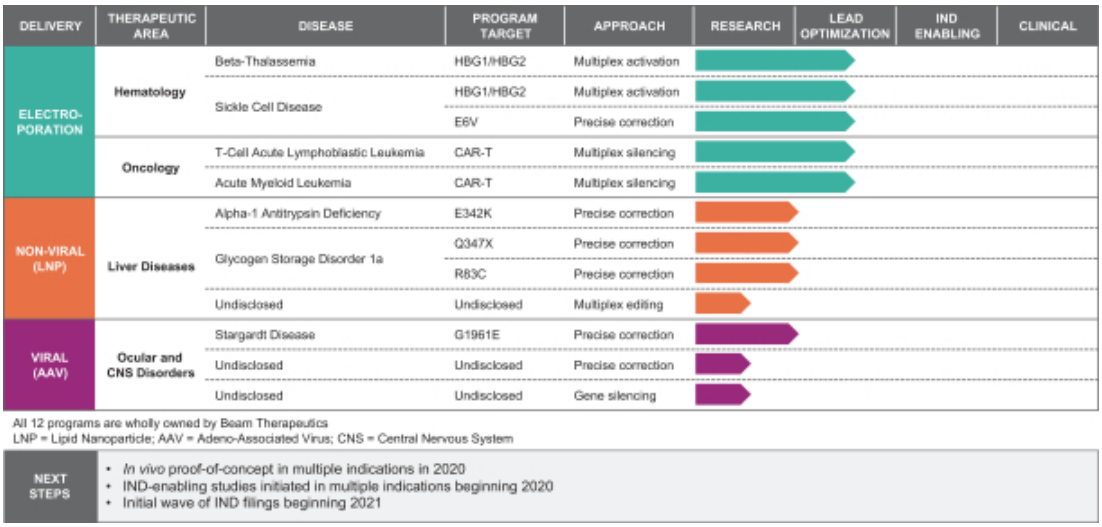
The elegance and simplicity of the “pencils” approach provides the basis for an efficient, precise, and highly versatile gene editing system, capable of gene correction, gene modification, gene silencing/gene activation, and multiplex editing of several genes simultaneously. Our base editor programs will be developed for genetically defined patient populations, which can potentially enable early proof-of-concept in Phase 1 testing and create a rapid path to pivotal trials and potential approval.

We believe base editors may have broad therapeutic applicability and transformational potential for the field of precision genetic medicines.

We are currently advancing a broad, diversified portfolio of 12 base editing programs against distinct editing targets, with each program progressing along a clearly defined scientific path and utilizing the full range of our development capabilities. To unlock the full potential of our base editing technology across a wide range of therapeutic applications, we are pursuing a comprehensive suite of clinically validated delivery modalities in parallel. For a given tissue type, we use the delivery modality with the most compelling biodistribution.

Our programs are organized by delivery modality into three distinct pipelines: electroporation for efficient delivery to blood cells and immune cells *ex vivo*; lipid nanoparticles, or LNPs, for non-viral *in vivo* delivery to the liver and potentially other organs in the future; and adeno-associated viral vectors, or AAV, for viral delivery to the eye and central nervous system, or CNS. We believe our base editing programs are well-positioned to leverage the clinical, regulatory, and manufacturing advancements made to date across gene therapy, gene editing, and delivery modalities to accelerate progression to clinical trials and potential approval.

Our current portfolio includes the following 12 programs:



For the majority of our 12 programs, we have demonstrated base editing of cells *in vitro* at therapeutically relevant levels, which we believe has the potential to be disease-modifying for each disease. We have also successfully demonstrated feasibility of base editing with each of our three delivery modalities in relevant cell types for electroporation and AAV and *in vivo* in mice for LNP. Our portfolio includes a novel approach to elevating levels of fetal hemoglobin for sickle cell disease and beta-thalassemia, as well as direct correction of the sickle cell mutation itself; engineered allogeneic CAR-T products through multiplex editing of T cells from healthy donors, initially for pediatric T-cell Acute Lymphoblastic Leukemia, or T-ALL, and pediatric Acute Myeloid Leukemia, or AML; precise correction of key point mutations in two severe liver disorders, Alpha-1 Antitrypsin Deficiency and Glycogen Storage Disorder 1a; and a precise gene correction approach to treating the

most prevalent point mutation causing Stargardt disease, a progressive ocular disorder for which there are no approved treatments.

We expect to achieve preclinical proof-of-concept *in vivo*, which would include engraftment of *ex vivo* base edited human cells in mice or base editing with AAV or LNP in non-human primates, for multiple programs in 2020. If successful, this will allow us to initiate investigational new drug, or IND, enabling studies for multiple programs beginning in 2020, leading to an initial wave of IND filings beginning in 2021.

Since our founding in 2017, we have developed and consolidated significant technology and intellectual property covering the elements of base editing, as well as additional gene editing technologies and delivery modalities, with exclusive licenses from Harvard University, The Broad Institute, Editas Medicine, and Bio Palette. In addition, we have raised approximately $224 million in capital from premier venture capital funds, healthcare-dedicated funds, major mutual funds, and other leading investors that share our vision to build a highly innovative, fully integrated genetic medicines company.

The Beam Team

Our organization and culture are key elements to realizing our vision of providing life-long cures for patients suffering from serious diseases. We were founded in 2017 by world-renowned leaders in the field of gene editing: David Liu, Ph.D., Feng Zhang, Ph.D., and Keith Joung, M.D., Ph.D. We believe the considerable academic and research expertise of our co-founders, combined with our exclusive licenses to technology developed in their labs, as well as our depth of expertise in base editing and drug discovery, has positioned us at the forefront of the field of advanced precision genetic medicines.

We have attracted a talented team of industry experts and scientists as part of a high performing team of over 100 employees, who have been involved in the filing of over 35 INDs and contributed to the development of 10 approved products. In addition, our executive leadership team has extensive expertise in building and leading successful biotech companies, including John Evans, our President and Chief Executive Officer, who has more than 15 years experience with innovative life science companies across strategy, business development, and the successful approval of multiple first-in-class medicines, and Giuseppe Ciaramella, Ph.D., our Chief Scientific Officer, who has been a pioneer in drug discovery and development across more than 40 anti-infectives, immunology, and biotherapeutics programs for over 25 years, in both large pharmaceutical and biotechnology companies.

Our research and development organization is comprised of individuals who are experts in gene editing technologies, computational biology, structural biology and crystallography, chemistry, protein engineering and molecular evolution, lab automation, translational medicine, and the manufacturing and delivery of genetic medicines. Our research team includes many of the scientists who worked directly on inventing our platform technologies, including Nicole Gaudelli, Ph.D., who, while in Dr. Liu's laboratory, invented the A-to-G base editor and is now Head of DNA Platforms at Beam, and Alexis Komor, Ph.D., whose work while in Dr. Liu's laboratory led to the original publication of the C-to-T base editor, and who is now a professor at University of California, San Diego, and a consultant to Beam. The collective efforts of our research team have resulted in several breakthroughs and improvements to our technology, on which we have filed numerous patent applications.

We call ourselves "The Beam Team." We have built a strong, values-driven organization focused on our people, advancing cutting-edge science, and rigorously developing a new class of precision genetic medicines. We believe our culture is an essential component to maintaining our competitive advantage, long-term. Our values define how we work together:

- A community of fearless innovators

- Rigorous and honest in our research
- Listening with open minds
- Committed to each other

Base Editors: A potential new class of medicines that perform precision chemistry on genes

The human genome has four types of bases found in DNA: adenine (A), cytosine (C), guanine (G), and thymine (T). Adenine pairs with thymine, and cytosine pairs with guanine. The genome is comprised of over three billion of these base pairs in two intertwining strands of DNA; the sequence of these bases encodes genes. In a living cell, these DNA sequences are continuously copied into short ribonucleic acid transcripts, called messenger RNA, or mRNA, which are then translated into proteins that perform the functions of life. Misspellings in genes, known as mutations, can yield proteins that are dysfunctional or missing altogether, causing disease. Errors of a single base, known as point mutations, are the most common class of genetic mutations, representing approximately 58% of all the known genetic errors associated with disease. Other natural genetic variations of a single base among human populations, revealed by population-level genomic studies, are known to protect against disease. To maximize the impact of these genetic insights, the ability to alter the human genome at the foundational level of genetic information – a single base – is crucial.

Existing gene editing technologies, including CRISPR, Zinc Fingers, Arcuses and TAL Nucleases, do not edit at the single base level. Instead, these technologies operate by creating a targeted double-stranded break in the DNA, and then rely on cellular mechanisms to complete the editing process. Such approaches can be effective in disruption of gene expression; however, they lack control of the editing outcome, have low efficiency of precise gene correction, and can result in unwanted DNA modifications.

Our base editing technology is an entirely new therapeutic approach capable of changing one base in the genome without making a double-stranded break in the DNA. Base editing involves the enzymatic modification of a single type of base at a targeted location directly on the gene, specifically C-to-T or A-to-G.

If existing gene editing approaches are “scissors” for the genome, our base editors are “pencils,” erasing and rewriting one letter in the gene.

The elegance and simplicity of the “pencils” approach is designed to create precise, predictable and efficient genetic outcomes at a targeted sequence. We believe base editors may have broad therapeutic applicability and transformational potential for the field of precision genetic medicines.

Background on Current Methods in Genetic Medicines

In the last decade, the field of genetic medicine has reached an inflection point, with groundbreaking advances in gene therapy, cell therapy, oligonucleotides and, most recently, gene editing. Several medicines have been approved using a number of these technologies, including gene therapies, such as Luxturna™, Zolgensma®, Strimvelis®, and Zynteglo™; genetically modified cell therapies, such as Kymriah® and Yescarta®; oligonucleotide therapies, such as Onpattro® and Spinraza®; as well as the successful progression of several gene editing approaches to clinical trials in the United States and Europe. With the exception of oligonucleotides, which must be dosed chronically, each of these therapies has the potential for life-long outcomes with a single treatment.

We believe we are well-positioned to accelerate progression of our base editing programs to clinical trials through potential approval by leveraging the clinical, regulatory, and manufacturing advancements made to date in the field of genetic medicine. In addition, we believe base editing technology has the potential to provide life-long cures after a single treatment by overcoming challenges associated with current methods in gene therapy and gene editing.

Current challenges in gene therapy

Gene therapy involves using viral vectors, including AAV or retroviruses such as lentiviruses, to deliver new copies of genes, or transgenes, to cells. Fine-tuning the level of expression of the transgene in different cell types and/or diseases can be challenging. Because transgenes may often not get inserted into the appropriate locus of the host genome, they do not benefit from endogenous regulation. In addition, since the mutated gene is still present, the effectiveness of the transgene may be diminished due to competition with the mutated protein.

In the case of AAV gene therapy, life-long expression of the transgene is a significant hurdle, as the persistence of AAV expression has not yet been achieved in several organs, especially in muscles and the liver. Lack of persistence can be further exacerbated when treating children, since the transgene becomes diluted as the child grows and cells are rapidly dividing. Finally, preexisting immunity may limit use in some patients altogether and certain immune responses may prevent redosing in the context of lack of persistence.

Retroviral vectors, including lentiviral vectors, work by inserting a gene payload into the patient's chromosome, typically *ex vivo*, and have demonstrated improved durability compared to AAV therapies. However, these vectors bear the risk of random genomic integration, which creates the potential of disrupting important genes or activating cancer-causing genes.

Current challenges in gene editing

Gene editing works by disrupting, inserting, or modifying genes in the natural context of the genome. The vast majority of existing gene editing methods rely on a class of enzymes, called nucleases, to make a double-stranded break in the DNA at a targeted location. These enzymes include CRISPR, Zinc Fingers, Arcuses, and TAL Nucleases, and, while these approaches have distinct technical features, they make the same type of edit and, therefore, share several similar limitations.

First, there is a lack of predictability in genetic outcomes when altering gene sequences with nucleuses. The dominant naturally-occurring DNA repair system that corrects double-stranded breaks within cells is called Non-Homologous End Joining, or NHEJ. This system can patch the broken ends of the chromosomes back together but can simultaneously insert or delete sequences at random near the location where the break occurs. While this NHEJ approach is effective if the desired outcome is to knock out or switch off the whole gene, it does not allow for precise control of the specific genetic outcome at the target site.

Second, there are potential toxicities associated with double-stranded breaks, such as cell death response and genomic instability. In addition, if the double-stranded break occurs in the wrong place, the break can also lead to unwanted gene disruptions. Multiple edits, and thus multiple double-stranded breaks, can compound this issue and lead to large-scale genomic translocations and rearrangements, potentially limiting the applicability of nuclease-based approaches in multiplex editing.

Third, while gene disruption with nucleases is highly efficient, making specific sequence changes to correct or modify genes remains largely inefficient. To change a gene sequence, gene editing using nucleases relies on a DNA repair pathway called Homology Directed Repair, or HDR. HDR is a low-efficiency DNA repair pathway, typically yielding single digit percentage editing. This pathway also requires the simultaneous delivery of an additional DNA template containing the desired, corrected gene sequence, which needs to be positioned at the precise location where the double-stranded break has occurred. The requirement of an additional DNA template also significantly increases the complexity of delivery. More recently, approaches have been developed to insert sequences into certain highly expressed genes, such as the albumin locus in liver cells. This strategy can only be used to address diseases that are associated with circulating proteins, and the efficiency of these approaches remains low.

Finally, gene editing through HDR does not allow for the correction of genes in non-dividing cells, since this DNA repair machinery is only expressed in dividing cells, further limiting their applications.

Advantages of Base Editing

Base editing is an emerging new class of precision genetic medicines using a completely novel mechanism for editing DNA, creating potential therapeutic options designed to overcome the limitations of existing approaches and expand the potential of genetic medicines:

- **Highly precise and predictable gene editing.** Our base editing approach uses a chemical reaction that enables precise genetic outcomes, making only one type of base edit at the desired target location.
- **Highly efficient levels of gene correction.** In contrast to HDR, the efficiency and precision of base editing allows therapeutically relevant levels of editing at targeted locations, which are unachievable by HDR methods in most cell types. For our most advanced programs, these levels range from 50%-90% editing of the target base, whereas HDR-based methods have typically shown less than 10% editing of the target base.
- **Broad therapeutic application.** Base editing enables a wide variety of editing strategies, including gene correction, gene modification, gene silencing/gene activation, and multiplex editing, with therapeutic potential in many areas.
- **Activity in both dividing and non-dividing cells.** Precise gene correction with base editing is not reliant on HDR, which is only expressed in dividing cells. As a result, base editing can be effective in both dividing and non-dividing cells.
- **No requirement for a DNA template.** Because base editing corrects DNA directly, there is no requirement for delivering an additional DNA template with the correct sequence, as is the case in HDR-based methods, which we believe may simplify delivery.
- **Avoidance of unwanted DNA modifications associated with double-stranded breaks.** Base editors do not create double-stranded breaks in DNA, thereby avoiding many of the concerns associated with double-stranded breaks, including unwanted gene disruptions, translocations, or deletions. With base editing, we are also able to make multiple simultaneous edits, called multiplexing, without any detectable chromosomal rearrangements.
- **Permanent editing of genes.** Base editing is permanent once the edit is made, creating the potential for a life-long therapeutic outcome. The durability of base editing extends to tissues with high cell turnover, as occurs in young children, since the edit will be passed on as cells divide. Furthermore, because the edits persist after the editor is gone, the expression of the base editor can be transient, thus significantly lowering delivery hurdles compared to gene therapies.
- **Preservation of natural regulation.** Base editing modifies genes in their native genomic setting, allowing the modified gene to benefit from its natural regulatory circuitry and ensuring a normal number of copies of the gene are present in the cell.
- **Versatile and modular product engine.** The same base editor can be repurposed to target different gene sequences by merely replacing the guide RNA, creating significant leverage from our initial platform investments and with the potential to drive high levels of efficiency throughout the drug discovery, development, and manufacturing processes.

Our Strategy

Our core base editing technology holds the potential to dramatically increase the precision, efficiency and impact of gene editing for a broad range of therapeutic applications. Our goal is to

become the leading company in precision genetic medicines by discovering, developing, manufacturing, and ultimately commercializing a new class of medicines through our proprietary base editing technology, with the vision of providing life-long cures to patients suffering from serious diseases. Key components of our strategy are as follows:

- **Build a highly innovative, fully integrated genetic medicines company.** To realize the full potential of base editors as a new class of medicines, we are building customized and integrated capabilities across discovery, manufacturing, and preclinical and clinical development. We intend to develop, manufacture, and commercialize therapeutic products independently, which we believe will maximize the value of our portfolio, the probability of technical success of our programs, and the speed at which we can provide life-long cures to patients.
- **Advance "waves" of programs into clinical development through a highly efficient discovery and development engine.** Our base editing platform is capable of rapidly targeting new diseases after only minimal changes to the product construct. We intend to capitalize on this versatility and efficiency to rapidly generate waves of new programs across our portfolio, strategically balancing risks and creating optionality. We plan to develop these programs for genetically defined patient populations, which can enable early proof-of-concept in Phase 1 testing and has the potential to create a rapid path to pivotal trials and approval.
- **Access the broadest range of therapeutic areas by leveraging clinically validated delivery modalities.** By leveraging all clinically validated delivery modalities in parallel, electroporation, non-viral and viral, we avoid reliance on any one delivery method, mitigate the risks inherent to novel delivery methods, and create optionality by advancing a broad, diversified portfolio. Our initial focus is in hematology, oncology, and immunology, and diseases of the liver, eye, and CNS.
- **Reinforce our leadership position in base editing through strategic investment in our platform and new technologies.** We have built a leading position in base editing by consolidating technology and intellectual property in the field and by establishing extensive capabilities to make significant advances in our platform and its potential. We intend to preserve and extend our leadership position by continuing to invest in our platform and new technologies.
- **Further expand patient access to our medicines through innovative strategic partnerships.** Given the breadth of opportunities that base editing provides, we plan to explore different types of partnerships, with both established and emerging companies, to create value in areas we decide not to pursue on our own but where these partners have significant capabilities that would enable us to accelerate patient access to base editing technology.
- **Maintain a culture of innovation that captures the best of academic science and translational medicine.** Breakthroughs in genetic medicines require a unique combination of cutting-edge exploratory science to enable new possibilities, and industrial rigor to convert them into therapeutic reality. Our vision, values, organization, and talent, strategy are designed to maximize our ability to operate at the forefront of novel genetic technologies in medicine.

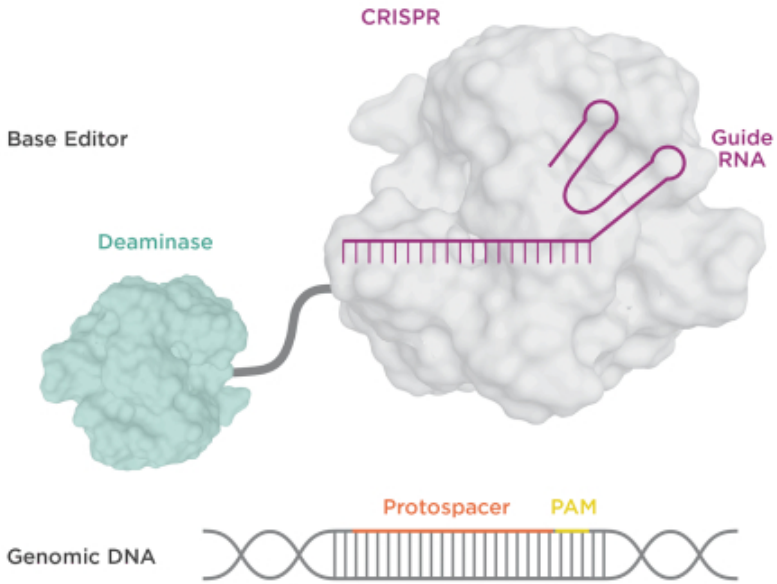
Our Base Editing Platform

Our novel DNA base editors have two principal components that are fused together to form a single protein: (i) a CRISPR protein, bound to a guide RNA, that leverages the established DNA-targeting ability of CRISPR, but modified to not cause a double-stranded break, and (ii) a base editing enzyme, such as a deaminase, which carries out the desired chemical modification of the target DNA base. This proprietary combination enables the precise and targeted editing of a single base pair of DNA, which has not been previously possible.

CRISPR proteins enable precise targeting of genomic DNA sequences. They have been adapted and engineered over the years to target specific genomic locations with high specificity in human cells. CRISPR proteins incorporate a programmable component called a guide RNA. The guide RNA includes a region of approximately 20 bases, which allows the CRISPR protein to recognize any DNA sequence that is complementary to the guide RNA.

This complementary sequence on DNA, also approximately 20 bases, is known as a protospacer. The short sequence of about three bases immediately following the protospacer on the genomic DNA is referred to as the protospacer adjacent motif, or PAM. The presence of the PAM is necessary for RNA-DNA pairing to occur when a matching protospacer sequence is present.

The figure below is a graphical representation of the base editor and its components, including the guide RNA with the single-stranded portion that is complementary to the protospacer in the genomic DNA.

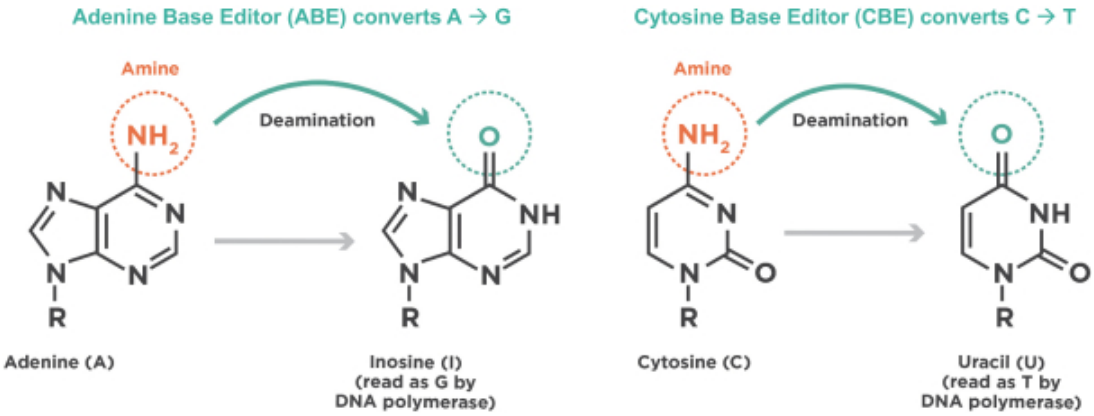


In our base editors, the first component is the CRISPR protein. We are currently using a Cas9 protein for our DNA base editors. We also have ongoing efforts to create base editors with other Cas proteins, including Cas12b. The targeting ability of the CRISPR protein has been preserved, but the cutting ability has been modified such that the CRISPR protein does not make a double-stranded break in the DNA. Our base editors benefit from an additional feature of the CRISPR protein, which, upon binding to its double-stranded DNA target, opens a four to five base single-stranded segment, known as the editing window.

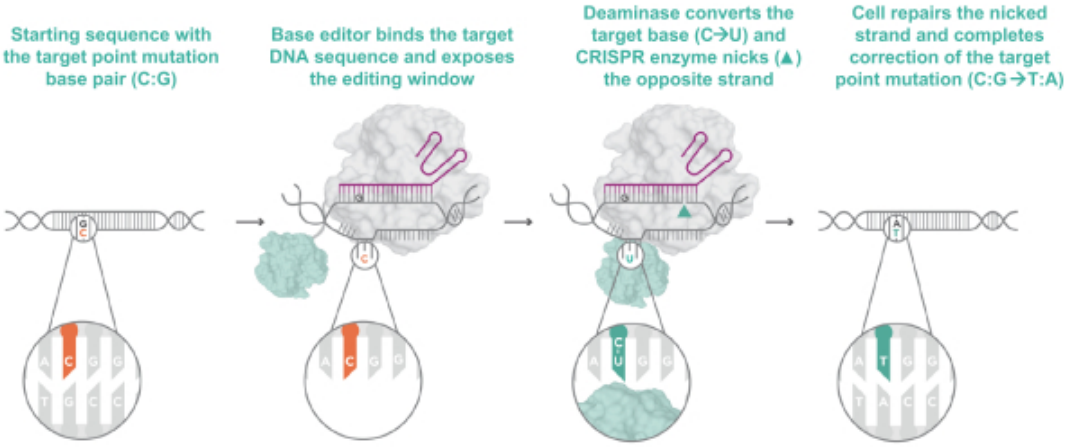
The second component of our base editors is a deaminase, a class of naturally-occurring enzymes. For our Cytosine Base Editors, referred to as “CBEs,” we use a deaminase that acts only on single-stranded DNA. This helps to minimize edits in other parts of the genome, where DNA is predominantly double-stranded. Similarly, for our Adenine Base Editors, referred to as “ABEs,” we use a different, engineered deaminase that also acts only on single-stranded DNA.

The deaminase makes a predictable chemical modification, called deamination, of the amine group on either adenine or cytosine. As shown in the figure below, the conversion of an amine group of A results in the formation of inosine, which is read by the DNA polymerase as a G, which subsequently leads to an A-to-G

change. The deaminase in a CBE will convert an amine group of C, resulting in the formation of uracil, which is read by the DNA polymerase as a T, which subsequently leads to a C-to-T change.



As shown in the figure below, the two components of our base editors, the CRISPR protein and the deaminase, are fused together to form a single protein. When introduced into a cell, the CRISPR targets the desired genomic location by recognizing a complementary section on the DNA to the section encoded in the guide RNA. The deaminase then makes the desired edit to a target base in the editing window.



In the example shown, a C is edited to a U on one strand of the DNA, which is read as a T. Once this strand has been edited, the intermediate DNA consists of an edited strand, containing a U at the target locus, and an unedited strand with a G. The U:G is a mismatch, which the cell will normally attempt to repair in a process that can potentially lose the edit. In order to preserve the editing, we modify the CRISPR in our base editors to cleave the unedited single strand of the DNA, referred to as nicking, rather than creating double-stranded breaks. Nicking increases the efficiency of editing by inducing the cell to use the newly-edited strand, and not the unedited strand, as the template for repair, resulting in a U:A pair without any translocations. Upon DNA repair or replication, the U is read as a T, resulting in a T:A pair. Therefore, the permanent conversion of a C:G base pair to a T:A base pair is completed.

Analogously, when an ABE is used instead of a CBE, an A:T pair is converted to a G:C pair. Because the DNA is double-stranded, by targeting the non-coding strand, we can also convert a T:A pair to a C:G and a G:C pair to a

A:T pair in the coding strand. For example, using ABE to install an A-to-G edit on the non-coding strand of the DNA will cause a T-to-C change in the coding sequence of the gene once the base pair has been fully modified.

The modular and individual components of our base editors can be rapidly customized for specific diseases, creating new therapeutic programs with significant efficiencies in development. By changing the guide RNA portions of the CRISPR protein, we can quickly and precisely retarget base editors to different genomic locations based on their gene sequences. By changing the deaminase, we can control which base is edited (e.g., C or A). As a result, we believe our base editing platform is highly versatile, efficient, and scalable for discovery of drug candidates.

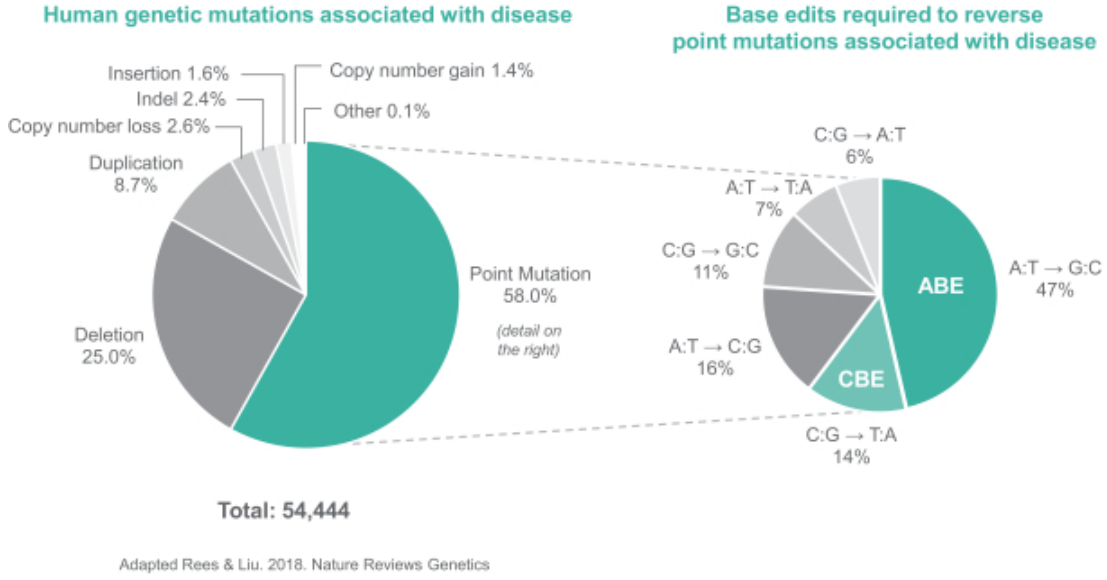
Diverse therapeutic applications of base editing

We believe the unique advantages of our base editing platform – single base editing precision, predictable editing outcome, high editing efficiency, and the avoidance of double-stranded breaks – make base editing a compelling approach for a wide range of therapeutic applications. This includes gene correction, gene modification, gene silencing and gene activation, as well as multiplex editing of several genes simultaneously.

Gene Correction

Errors of a single base, known as point mutations, are the most common form of genetic mutations, representing approximately 58% of all the known genetic errors associated with disease, as shown in the figure below. For example, sickle cell disease is caused by a single point mutation at position 6 in the adult hemoglobin gene, while alpha-1 antitrypsin deficiency is caused by a single point mutation at position 342 in the SERPINA1 gene.

We believe base editors may be an ideal tool for repairing point mutations. Also shown in the figure below, our base editors are capable of correcting approximately 61% of the known point mutations that cause human disease. Our ABEs can address approximately 47% of point mutations, while our CBEs can address approximately 14%, making these editors potentially powerful tools for the treatment of a wide range of diseases. To address the remaining point mutations within the genome, we have an active research effort to develop editors that can make different chemical modifications, such as changing C to G or A to T.



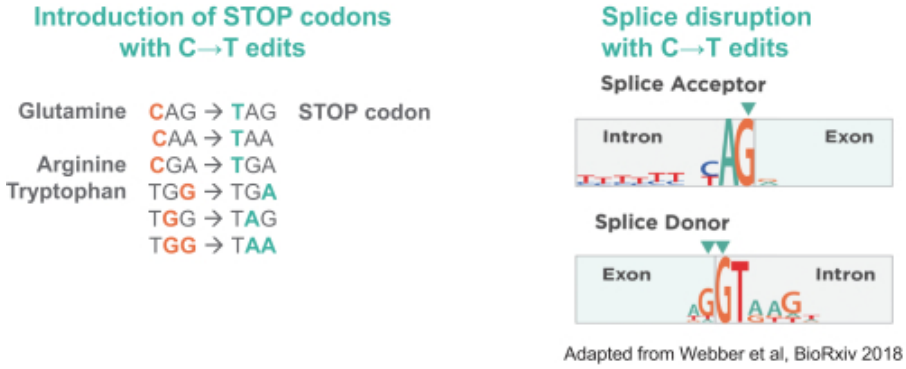
Adapted Rees & Liu. 2018. Nature Reviews Genetics

Gene Modification

In addition to repairing point mutations, base editors are also capable of making other kinds of precise modifications to genes that could be used to treat disease. Natural genetic variations of a single base among human populations, revealed by population-level genomic studies, are now known to protect against or modify risk for a disease. For example, the risk of Alzheimer's disease is significantly higher in patients with the apolipoprotein E4 genotype (APOE4), reflecting a variation of just one base in the apolipoprotein gene (APP), whereas it is significantly lower in patients with the "Icelandic" variant of the amylolid precursor protein gene, reflecting a single base change variant (A673T). Several genes, including proprotein convertase subtilisin/kexin type 9 (PCSK9), have also been associated with an increased risk of coronary artery diseases. Therefore, base editors could also potentially prevent or modify risk of disease by making these kinds of precise single-base modifications to genes, informed by human clinical genetics.

Gene Silencing or Activation

Upregulation or downregulation, including silencing and activation, of gene expression is a desirable therapeutic approach to cure many diseases. The high level of precision of base editors is ideally suited to alter regulatory regions of genes, ensuring that only a few bases at precise locations are altered to achieve the desired effect without causing broader disruptions to adjacent regions that may still have important regulatory functions. For example, we have demonstrated re-activation of expression of fetal hemoglobin by precisely changing the regulatory region of the relevant genes to which one or more repressor proteins can bind, including B-cell lymphoma/leukemia 11A, or BCL11A. Both our C and A base editors can also be used to silence the expression of genes, with editing rates that are highly comparable to those achieved with nuclease-based editors but without requiring a double-stranded break. Gene silencing, such as targeting surface proteins in a CAR-T cell, can be achieved either by the conversion of certain short gene sequences, called codons, into STOP codons or by the disruption of splice donor-acceptor sites, in each case with a single base conversion, as shown in the figure below.



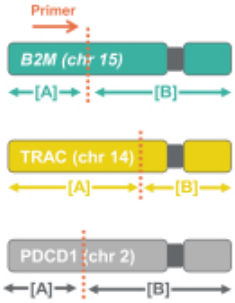
Adapted from Webber et al, BioRxiv 2018

Multiplex editing

Because they avoid creating double-stranded breaks, base editors are particularly advantageous for situations in which multiple sequences in the genome must be simultaneously targeted. This could include targeting duplicated or repetitive sequences in the genome, as is the case with the identical regulatory regions of the two neighboring genes for fetal hemoglobin, or targeting several genes at once, such as in the creation of advanced cell therapies like CAR-T cells with a combination of features that could dramatically enhance their therapeutic potential.

The simultaneous creation of multiple double-stranded breaks by nucleases can cause unwanted large-scale genomic rearrangements, such as translocations and deletions. These genomic rearrangements occur more frequently as the number of double-stranded breaks increases. Conversely, base editors do not create double-stranded breaks, and we have demonstrated that they can edit multiple locations simultaneously without causing any detectable chromosomal rearrangements, as shown in the figure below.

No detectable translocations in triple-edited cells for CBE as compared to Cas9 (N = 3 donors)*

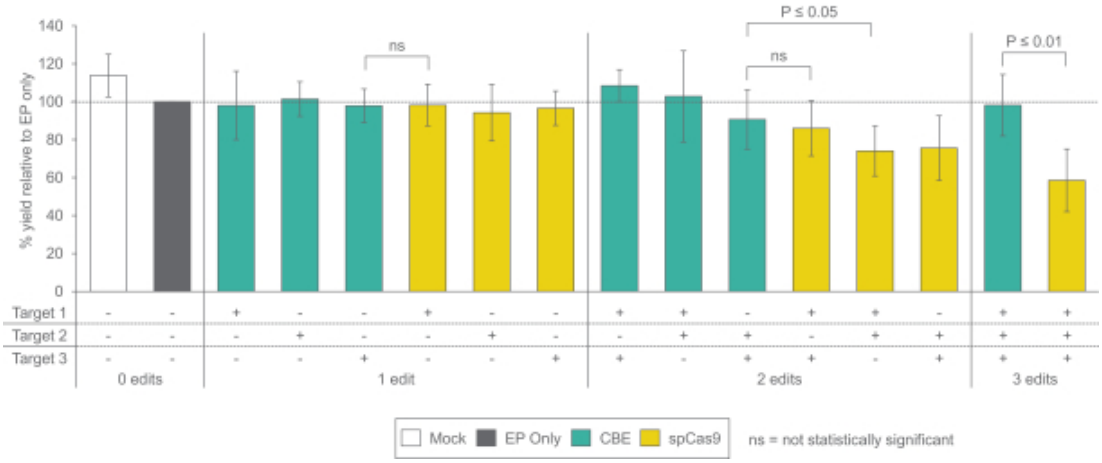


Type	Gene [Fragment]	Control (%)	CBE-treated (%)	Cas9-treated (%)
On target modification (% C→T or indels)	B2M	0	89.9%	53.0%
	TRAC	0	97.9%	77.2%
	PDCD1	0	89.1%	55.2%
Genomic rearrangement products (% rearranged)	B2M [A] / TRAC [A]	0	**0**	**0.9%**
	B2M [A] / TRAC [B]	0	**0**	**0.4%**
	B2M [A] / PDCD1 [A]	0	**0**	**1.6%**
	B2M [A] / PDCD1 [B]	0	**0**	**0.5%**
	B2M [B] / TRAC [A]**	0	**0**	**0.5%**

* Lower limit of detection for rearrangements of 0.1%; ** B2M-B only measurable if translocation includes local rearrangement in B2M; B2M = beta 2 macroglobulin gene; TRAC = T-cell receptor alpha constant chain gene; PDCD1 = programmed cell death protein 1 gene

Additionally, there are manufacturing benefits as cells that have three or more nuclease edits appear to have a significant growth deficit compared to cells that have been edited the same number of times with a base editor, as shown in the figure below.

Cell yield relative to electroporation (EP) control (N=6)



We believe that our base editors can provide a significant and meaningful advancement in therapies where more complex genome editing is required, such as targeting multiple sequences across the genome or creating highly engineered cellular therapies.

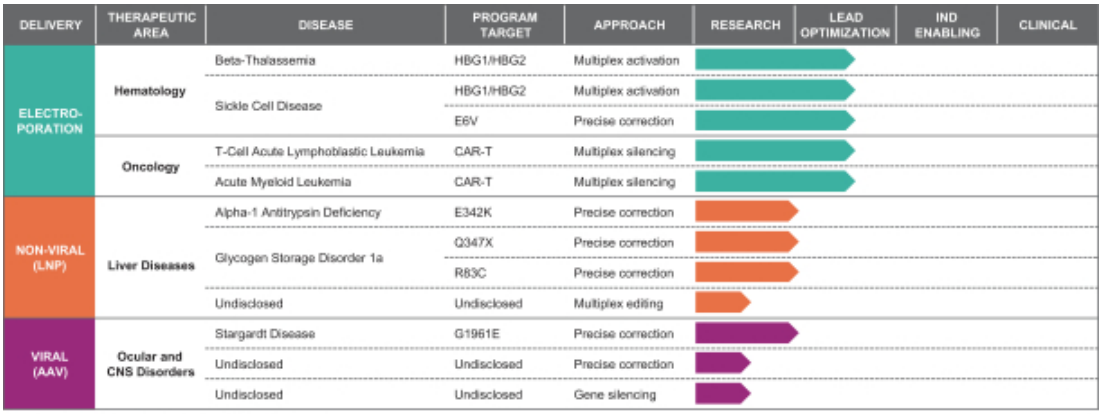
Our Portfolio

We believe a diversified portfolio across multiple delivery pipelines will maximize our ability to provide life-long therapies to patients over the broadest range of diseases possible. We are currently advancing a portfolio of 12

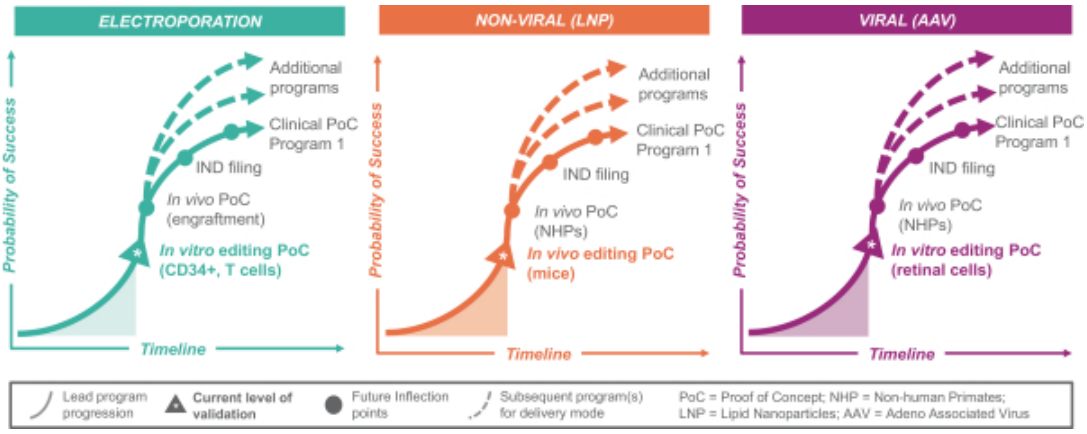
base editing programs, with each program progressing along a clearly-defined research and development path. We are also evaluating numerous targets that are in earlier stages of research. We plan to advance multiple programs through clinical development in parallel, with each one potentially capable of delivering proof-of-concept in Phase 1 clinical studies in genetically-defined patient populations and potentially reaching approval on an accelerated pathway.

Our portfolio is purposefully built around a mix of strategic and technical profiles, creating significant optionality and risk diversification. We prioritize and advance programs based on a number of criteria, including high unmet medical need, editing feasibility, clinically validated delivery modalities, favorable clinical and regulatory development pathways, and evidence that base editing offers potentially compelling advantages for patients over available standards-of-care and novel therapeutic modalities in development.

Our programs are organized by delivery modality into three distinct pipelines: electroporation for hematology and oncology cell therapy, LNP for the liver, and AAV for the eye and CNS. For the majority of our 12 programs, we have demonstrated base editing of cells *in vitro* at therapeutically relevant levels, which we believe has the potential to be disease-modifying for each disease. We have also successfully demonstrated feasibility of base editing with each of our three delivery modalities in relevant cell types for electroporation and AAV and *in vivo* in mice for LNP. We expect to achieve preclinical proof-of-concept *in vivo*, which would include engraftment of *ex vivo* base edited human cells in mice or base editing with AAV or LNP in non-human primates, for multiple programs in 2020. If successful, this will allow us to initiate investigational new drug, or IND, enabling studies for multiple programs beginning in 2020, potentially leading to an initial wave of IND filings beginning in 2021.



The modularity of our platform means that establishing preclinical proof-of-concept of base editing using a particular delivery modality will potentially reduce risk and accelerate the timeline for additional product candidates that we may develop targeting the same tissue. In some cases, a new product candidate may only require changing the guide RNA. Subsequent programs using the same delivery modality can also take advantage of shared capabilities and resources of earlier programs. In this way, we view each delivery modality as its own unique pipeline, where the success of any one program may pave the way for a large number of additional programs to progress quickly to the clinic, as illustrated in the figure below.



Translating Base Editors into Product Candidates

We are optimizing specificity and establishing manufacturing capabilities as well as delivery modalities needed to translate these base editors into product candidates.

Specificity in base editing

Characterizing and optimizing the off-target profile of any editing program is a critical need in gene editing. The combination of our experienced scientific team and depth of our platform capabilities, along with our founders' contributions, has allowed us to establish a comprehensive approach to potentially characterize and address off-target editing liabilities of base editing. For example, we have developed and in-licensed sophisticated tools to assess possible off-target base editing, and we continue to make improvements to our base editors in order to increase their specificity. Collectively, these advancements are designed to support our planned IND filings.

Our comprehensive approach to addressing potential off-target effects is supported by proven industry-standard assays to predict and detect off-target editing, with some tailored specifically for base editing. Each base editor and guide RNA construct undergoes extensive evaluation to characterize its on- versus off-target editing profile. Guide RNAs that have minimal binding to off-target sites would be chosen for each program, as confirmed through computational and experimental assays. We then assess the potential for the base editor to edit DNA or RNA independently of CRISPR binding, as shown in recent publications. Importantly, our deaminases only edit single-stranded DNA, ensuring that double-stranded DNA outside the editing window remain unedited. Additional proprietary insights, including further optimization of the deaminase domain, are used to potentially minimize residual risk of off-target DNA editing, or transient editing of RNA strands, by the base editor.

Furthermore, in some editing windows, there are more than one C or A base which can be edited, potentially resulting in the modification of an additional base, called a "bystander edit," to the targeted base. For example, a particular editing window may have two A bases, one of which is the intended target. Importantly, potential

bystander edits are highly predictable based on analysis of the target gene sequence. As a result, a bystander assessment is a routine part of our early discovery process. When it occurs, bystander editing is often inconsequential, either because of the application (such as when silencing gene function by introducing premature stop codons) or because the genetic code dictates that many codon changes, including almost all third-position transitions (i.e. A-to-G or C-to-T), do not change the amino acid. Infrequently, a bystander edit may lead to an unwanted amino acid change at the target site which could counteract our effort to correct the gene sequence and restore function. In such cases, we employ multiple strategies intended to ensure that any consequence of the bystander edit is mitigated or eliminated. This may include the use of alternative editors that can bind at slightly different positions on the DNA, thus moving the editing window so that the on-target edit is retained while the bystander edit is avoided. In other cases, the bystander edit may be acceptable since the amino acid change leads to a protein with features that are indistinguishable from those of the wild type protein, as determined by biochemical assays or as validated by existing human polymorphisms. Finally, in rare cases where a base editor for a given target site creates a bystander edit which cannot be avoided and leads to a non-functional protein, such a target would no longer be pursued.

Manufacturing base editor product candidates

Many of the general principles and processes used to synthesize, formulate and deliver base editors are similar to those already in development for nuclease-based gene editing technologies. Because of this, we are able to leverage the advances already made in the field of genetic medicine manufacturing.

Our internal process development team is highly experienced across all of our delivery modalities. We have already begun process development initiatives for our most advanced programs, and we intend to transfer optimized protocols to selected contract manufacturing organizations, or CMOs.

For our initial waves of clinical programs, we intend to use CMOs with relevant manufacturing experience in genetic medicines. We have partnered with a CMO that has long-standing experience in manufacturing guide RNAs under GMP standards. We have also identified CMOs for the manufacturing of all other components of the product candidates we may develop.

Over the longer term, due to the importance of high-quality manufacturing and control of production, we may establish our own manufacturing facility. Given our investment in electroporation, viral and non-viral delivery approaches, we anticipate using a facility with the flexibility to manufacture different drug product modalities.

Delivery of base editors

Our delivery strategy is to establish a comprehensive suite of clinically validated technologies in parallel. We believe no single technology has been able to deliver medicines to different target organs with equal efficacy. As a result, for a given tissue type, we use the delivery modality with the most compelling biodistribution. We plan to use electroporation for efficient delivery to blood cells and immune cells *ex vivo*, LNP for *in vivo* delivery to the liver and potentially other organs in the future, and AAV for *in vivo* delivery to the eye and CNS. This strategy utilizes the work of others in the field who have clinically validated each of these approaches for other nucleic acid payloads. This strategy also allows us to benefit from many years of preclinical and clinical industry knowledge, which we intend to capitalize on to rapidly advance our portfolio towards clinical development.

Ex Vivo Delivery via Electroporation

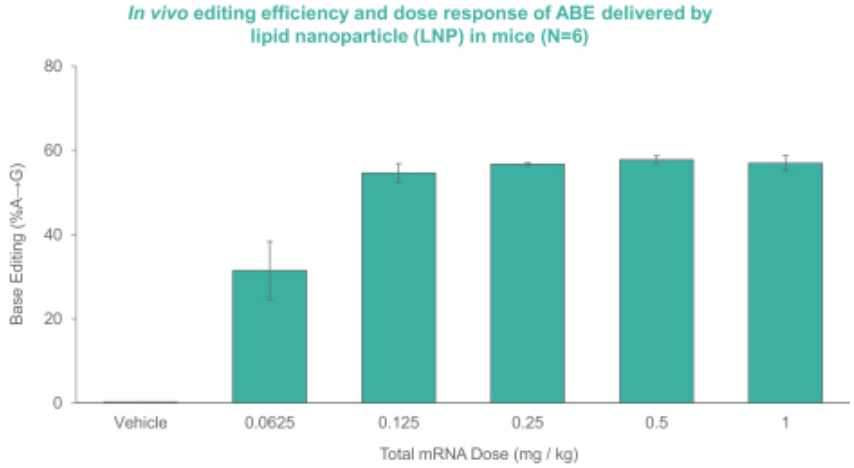
Electroporation is a clinically validated technology for the *ex vivo* delivery of various therapeutic constructs into harvested cells, which are then reintroduced into the body. Electroporation introduces nucleic acid or proteins into cells by discharging an electrical pulse across a cell membrane. With electroporation, we introduce the

base editor into the cells as a messenger RNA, or mRNA, encoding the editor, or as a purified protein along with the guide RNA for a given target. When using electroporation for delivery of base editors in hematology, the patient first undergoes a standard myeloablation procedure, which is also used in allogeneic hematopoietic stem cell transplant therapy, to remove all endogenous bone marrow hematopoietic stem cells, or HSCs. The base editors are then introduced in the HSCs using electroporation, and the HSCs are re-infused back into the patient approximately one to two months after initial extraction of the patient's HSCs. Once reinfused, the HSCs begin repopulating a portion of the bone marrow as permanently modified HSCs in a process known as engraftment. The engrafted HSCs give rise to progenitor cell types with the corrected gene sequences.

Electroporation has been used extensively preclinically and, more recently, clinically for gene therapy and gene editing applications. The electroporator that we are initially using is referenced in a U.S. Food and Drug Administration, or FDA, Drug Master File and has been used in more than a dozen clinical trials. We are using this technology to advance our *ex vivo* programs in several areas, including for the treatment of diseases in hematology and oncology.

Non-Viral Delivery In Vivo with Lipid Nanoparticles

LNPs are a clinically validated technology for delivery of nucleic acid payloads to the liver. LNPs are multi-component particles that encapsulate therapeutic elements, and protect them from degradation while in an external environment, enabling the transient delivery of the base editor *in vivo.* Multiple third-party clinical trials have demonstrated the effective delivery of silencing RNA, or siRNAs, to the liver using LNPs. We have developed several proprietary LNP formulations and have shown effective base editing of a surrogate target in mice at low doses, an example of which is shown in the figure below.



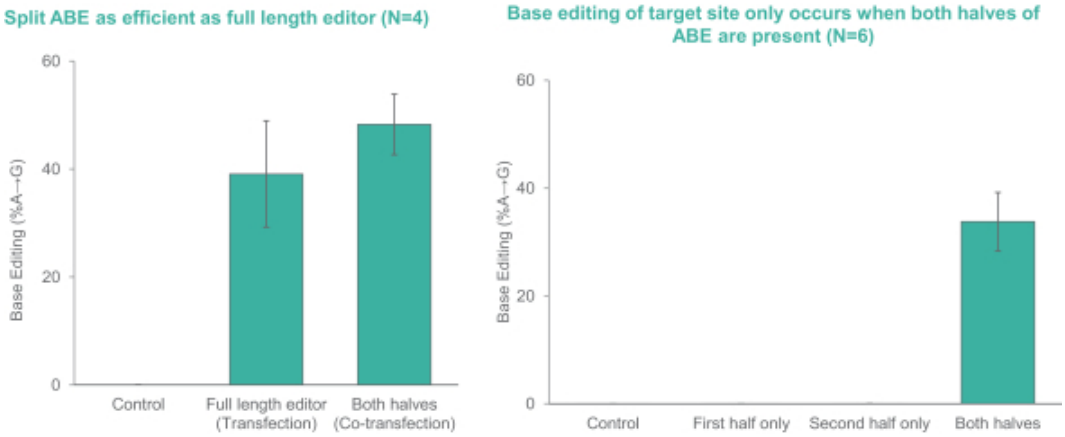
Because only one dose of a base editing therapy may be needed in a course of treatment, LNPs are a suitable delivery modality that we believe is unlikely to face complications seen with chronic use of LNPs, such as when delivering oligonucleotides. All of the components of the LNP, as well as the mRNA encoding the base editor, are well-defined and can be made synthetically, providing the opportunity for scalable manufacturing.

We believe our LNP formulations will be important strategic assets that will facilitate the efficient development of subsequent product candidates in our non-viral delivery pipeline. We are currently using a variety of cationic lipids from various sources to advance our programs for genetic liver diseases. We intend to identify a lead LNP formulation that demonstrates biodistribution to hepatocytes in appropriate non-human primate models, which we would then plan to use in our clinical studies.

Viral Delivery In Vivo with Adeno-Associated Virus Vectors

AAV is a clinically validated technology that has been extensively used for gene delivery to a variety of tissues. AAV is a small, non-pathogenic virus that can be repurposed to carry a therapeutic payload, making it an ideal vector for delivery of gene editing therapies. Several clinical trials have been conducted or are in progress with different AAV variants for multiple diseases, including diseases of the eye, liver, muscle, lung and CNS. We have an option to in-license a variety of AAV variants that could be selected for optimal distribution to multiple organs.

Because our DNA base editors are larger than the approximate 4.5kb packaging limit of AAV vectors, we use a novel split intein technology that is designed to deliver the base editor and guide RNA by co-infection with two viruses, where each virus contains approximately one half of the editor. High levels of base editing efficiency have been demonstrated using split editors, which are comparable to those achieved with full length editors. As shown in the figures below, our novel split editor achieves equivalent levels of editing to the full-length editor, and its activity is strictly dependent upon both halves of the split editor being present.



Ex Vivo Electroporation for Hematologic Diseases and Oncology

Sickle Cell Disease and Beta-Thalassemia

Opportunity

Sickle cell disease is a severe inherited blood disease caused by a single point mutation in the beta globin gene at the sixth amino acid, also known as Hemoglobin S, or HbS. This mutation makes the protein aggregate into long, rigid molecules that bend red blood cells into a sickle shape under conditions of low oxygen. Sickled cells obstruct blood vessels and die prematurely, ultimately resulting in anemia, severe pain (crises), infections, stroke and early death. Sickle cell disease is the most common inherited blood disorder in the United States, affecting an estimated 100,000 individuals, of which a significant proportion are of African-American descent (1:365 births). The only potentially curative therapy currently available for patients with sickle cell disease is allogeneic Hematopoietic Stem Cell Transplant, or HSCT; however, this procedure holds a high level of risk, particularly Graft-versus-Host Disease, or GvHD, resulting in a low number of patients opting for this treatment. Other treatments generally focus on managing patients' symptoms, including pain medicines during vaso-occlusive crises, hydroxyurea to reduce the number of pain episodes, and antibiotics and vaccines to prevent bacterial infections.

Beta-thalassemia is an inherited blood disorder caused by any one of over 200 mutations in the hemoglobin beta gene, or HBB, which results in reduced production of functional hemoglobin. Transfusion-dependent beta-

thalassemia, or TDBT, is the most severe form of this disease, often requiring multiple transfusions per year. Patients with TDBT suffer from failure to thrive, persistent infections, and life-threatening anemia. As a consequence of the frequent transfusions, patients with TDBT require iron chelation therapy, which is associated with significant toxicities, resulting in low levels of adherence. The incidence of symptomatic beta-thalassemia is estimated to be 1:100,000 worldwide, including 1:10,000 in Europe. In the United States, based on affected birth incidence of 0.7 in 100,000 births, and increasing survival rates, we expect the population of individuals affected by this disease to be more than 1,400 and rising. As with sickle cell disease, the only potentially curative treatment available today is allogeneic HSCT, which holds a high level of risk, particularly GvHD, resulting in a low number of patients opting for this treatment.

Limitations to current therapeutic approaches

Current efforts to treat these diseases include gene therapy and a variety of approaches to elevate a compensatory form of hemoglobin called fetal hemoglobin, or HbF. A lentiviral gene therapy for one form of beta-thalassemia has been approved in Europe; however, significant unmet medical need remains in these diseases. Lentiviral gene therapy approaches rely on random genomic insertion, which introduces the risk of disrupting important genes or activating cancer-causing genes.

Efforts by others to elevate fetal hemoglobin include knock out of a repressor protein with RNA interference, or RNAi, nuclease editing, or small molecules, with the potential drawback that other biological functions of the repressor protein will also be disrupted. Furthermore, since the two copies of the HbF gene, HBG1 and HBG2, have identical regulatory regions, use of a nuclease to directly re-activate the fetal hemoglobin genes may lead to deletions as a result of simultaneous double-stranded breaks in the neighboring genes. Reported levels of HbF upregulation for these nuclease-based approaches are approximately 30-40%, potentially reaching the threshold of therapeutic efficacy, but data suggest that higher upregulation would be beneficial if achieved.

In sickle cell disease, attempts to directly edit the sickle cell gene with nucleases, leveraging HDR, have been limited by low efficiency, with reported *in vivo* correction rates of 10%. Small molecule therapies, such as voxelotor and rivipansel, and antibodies, such as crizanlizumab, are in clinical development for these diseases. However, these approaches manage, rather than cure, the disease and do not address all of its symptoms.

Our approaches

We are using base editing to pursue two complementary approaches to treating sickle cell disease and one to treat beta-thalassemia:

- A differentiated approach to elevating fetal hemoglobin which could be used in treatments for both sickle cell disease and beta-thalassemia
- A novel approach to directly correcting the sickle mutation

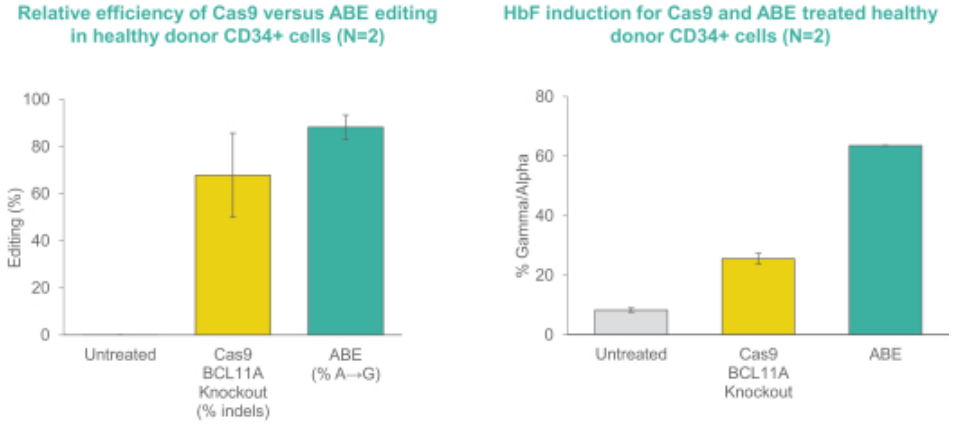
Approach 1: Recreate naturally-occurring protective HPFH mutations to elevate HbF

The beneficial effects of HbF to compensate for mutations in adult hemoglobin were first identified in individuals with a condition known as Hereditary Persistence of Fetal Hemoglobin, or HPFH. Beta-thalassemia or sickle cell disease patients who also have HPFH are asymptomatic or experience a much milder form of their disease. HPFH is caused by single base changes in the regulatory region of the HbF genes (HBG1 and HBG2), which increases the expression of the fetal form of hemoglobin by preventing the binding of one or more repressor proteins.

Using base editing, we reproduce these specific, naturally-occurring base changes in the regulatory elements of the HbF genes, preventing binding of repressor proteins and leading to re-activation of HbF expression. We believe this approach offers several potential advantages over others:

- **Higher levels of HbF.** Our most effective base editors deliver a higher level of HbF than other editing approaches, which are likely to correlate with further reductions in disease symptoms and improved health.
- **High precision in editing.** Our base editor alters only a few bases at targeted locations in the regulatory regions of the HbF genes, the minimal change required to re-activate HbF.
- **Validated by human genetics.** Our base editor program uses a precise, direct editing strategy that is validated by human genetics. HPFH individuals are asymptomatic or experience a much milder form of their disease.
- **Specific re-activation of HbF genes.** HbF re-activation occurs without impacting the expression or function of the repressor protein itself, avoiding any interference with other biological activities in which the repressor is involved.
- **No deletions or translocations.** Our base editors can precisely and directly edit both fetal hemoglobin genes simultaneously without any genomic or chromosomal alterations, unlike nucleases.
- **Non-viral delivery.** Unlike lentiviral gene therapies, base editors are simple to manufacture, delivered via electroporation, and edit the genome at a predictable location without integration.

We have screened multiple guides and editors and have selected a combination which efficiently and precisely inserts protective mutations in the HbF gene regulatory regions. We have selected a lead candidate that has demonstrated 80% editing at the target site in the HBG1 and HBG2 genes, and yielded over 60% upregulation of HbF in human CD34+ cells, as shown in the figure below.



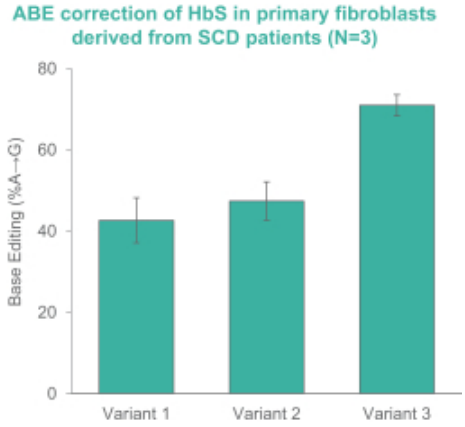
Next Steps

We are progressing our HPFH program towards clinical studies by conducting long-term studies to support our process development efforts prior to filing an IND. This will involve IND-enabling studies to fully characterize the edited cells and confirm the long-term persistence of editing. We have engaged with reputable CMOs to develop the manufacturing process for the guide RNA, the base editor, and the final clinical drug candidate to support our IND. We intend to have a pre-IND meeting with the FDA to confirm that our approach is suitable for progression to an IND filing.

Approach 2: Direct correction of the sickle cell point mutation

Our second base editing approach for sickle cell disease is a direct correction of the causative HbS point mutation at position 6 of the beta globin gene. By making a single A-to-G edit, we have demonstrated the ability to create the naturally-occurring “Makassar” variant of hemoglobin. This variant, which was originally identified in humans in 1970, has the same function as the wild-type variant and does not cause sickle cell disease. Distinct from other approaches, cells that are successfully edited in this way are fully corrected, no longer containing the sickle protein.

We have identified base editors that have demonstrated 40% to 70% correction of the sickle cell point mutation into the functional Makassar variant in primary fibroblasts isolated from patients with sickle cell disease, as shown in the figure below. Published studies suggest that 20% correction of HbS may be sufficient to cure the disease.



Next Steps

We are advancing this program by testing levels of direct correction of the beta globin gene in CD34+ cells derived from patients with sickle cell disease. Similar to our HPFH approach, we plan to optimize our editing process and will conduct engraftment studies in mice as well as other IND-enabling studies to monitor the efficacy and safety of this editing approach, followed by human clinical trials in patients with sickle cell disease.

Expansion opportunities in hematology pipeline

Once we have established the ability to deliver base editors into CD34+ cells in a transplant setting for beta-thalassemia and sickle cell disease, we believe we will be able to rapidly accelerate other CD34+ programs. We expect that developing new programs may require only minimal incremental investment, selecting different guide RNAs, and making minor changes to the base editor. This could potentially create entirely new product candidates for different gene targets.

Ex Vivo Electroporation for Multiplex Editing of Advanced Cell Therapies

CAR-T Cell Therapies in Immunology/Oncology

Opportunity

CAR-T cell therapy is a form of immunotherapy that harness the power of T cells to recognize and kill tumors. Using a protein on their surface called a T cell receptor, or TCR, T cells can distinguish between tumor cells and

healthy cells to selectively kill tumors. However, tumors have evolved numerous ways of evading TCR-mediated killing. In CAR-T cell therapy, T cells are engineered to express a protein called a chimeric antigen receptor, or CAR, that recognizes specific proteins on the surface of tumor cells and allows the T cells to kill independently of the TCR, thus circumventing the tumor cells' evasion of the TCR.

There are currently two FDA-approved CAR-T products that are "autologous", or generated using cells taken directly from the patient. Following the initial isolation, these cells are engineered *ex vivo* to express the CAR and are then reintroduced into the patient. These products have demonstrated dramatic efficacy in certain patients with relapsed or refractory hematologic cancers.

Limitations of current approaches

Despite their promising potential, autologous CAR-T therapies have several limitations, including lack of patient eligibility, delays in treatment, and unscalable and costly manufacturing processes. The ability to generate "off-the-shelf" CAR-T products that can be manufactured using standardized processes from a single healthy donor for use in multiple patients can address the above limitations. These products are known as allogeneic, and several approaches are being explored in clinical trials. However, because allogeneic CAR-T cells are isolated from a donor, these approaches introduce new complications:

- **Graft-versus-Host disease.** For allogeneic CAR-T approaches, the original targeting element of the TCR must be removed to prevent the CAR-T from targeting other tissues in the patient's body.
- **Host-versus-Graft rejection.** To prevent recognition and subsequent rejection by the patient's immune system, the proteins of the donor that the immune system recognizes on the surface of the CAR-T cells must be removed.

Additional obstacles for CAR-T therapies include: limited persistence and proliferation within the host; heterogeneity of antigen expression within the tumor that promotes resistance; poor trafficking to the tumor site; and functional suppression by the hostile tumor microenvironment. These collective hurdles require T cell engineering strategies, such as multiplex editing, that target a large and growing list of candidate genes in the same cell.

We believe that multiple factors need to be engineered in CAR-T cells to augment their efficacy to treat a broader range of hematological malignancies and solid tumors. While it is possible to use nucleases to knock out multiple genes at the same time, multiplex editing with nucleases creates simultaneous double-stranded breaks across the genome. We believe that the high probability of unwanted genomic rearrangements, which increases dramatically with the number of double-stranded breaks made, limits the number of simultaneous edits that can be made in a CAR-T product. In addition, the numerous double-stranded breaks impact cell viability and cell yield, which leads to an inefficient manufacturing process. Overall, this may limit the ability to use nuclease-based technologies to develop highly engineered cell therapies that can overcome the obstacles described above.

Our approach: Multiplex base editing for allogeneic cell therapies

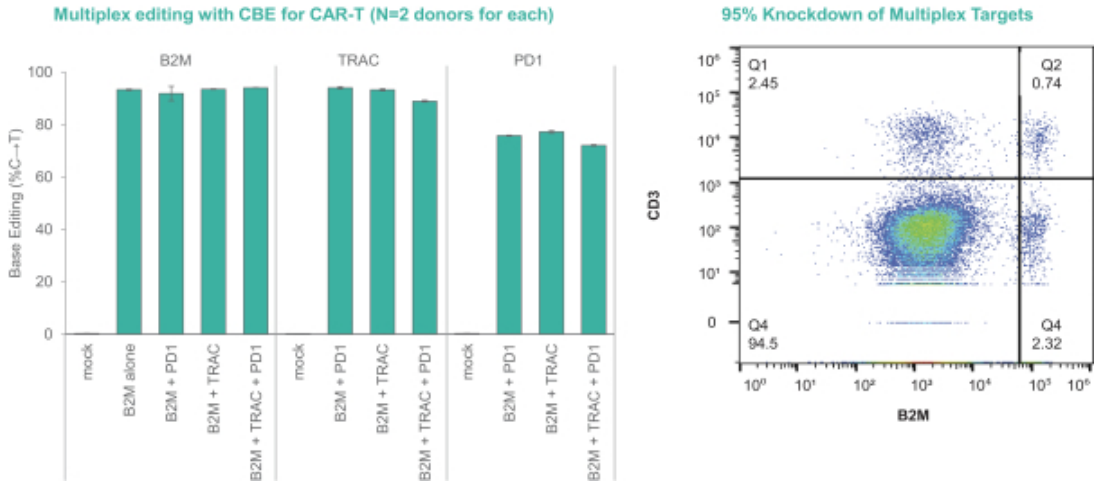
We believe that base editing is an ideal tool to simultaneously multiplex edit a large number of genes, without chromosomal rearrangements, to endow allogeneic CAR-T cells with a combination of features that may dramatically enhance their therapeutic potential. We aim to generate CAR-T product candidates with several potential advantages, which include:

- **An efficient manufacturing process.** We intend to introduce the editor and several guide RNAs for the different edits simultaneously. This single electroporation step and the lack of double-stranded breaks

maximize cell yield, making the process rapid and efficient. Furthermore, by enabling an allogeneic cell source for the product candidates we may develop, we can potentially create a more scalable and cost-effective manufacturing process.

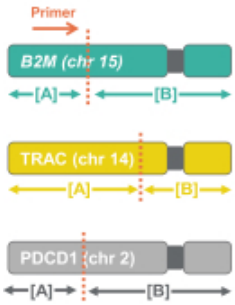
- **The potential to mitigate tumor resistance by developing multi-CAR product candidates.** Variable expression or downregulation of the targeted tumor antigen can lead to resistance or relapse. By targeting more than one antigen at the same time, we can potentially reduce the ability of the tumor to escape killing.
- **Prevention of CAR-T cell fratricide.** When targeting hematological tumors, the shared antigens that are expressed on both the malignant blood cells and the CAR-T cells leads to fratricide, or cell-to-cell killing of CAR-T cells. We can use base editing to eliminate the antigens from the CAR-T cells, preventing fratricide.
- **Broader availability to patients.** Our allogeneic approach opens up the potential to treat more patients, including those who might not be eligible for autologous CAR-T due to inadequate T cell yield or function or those who require rapid treatment and cannot wait for an autologous process.
- **The potential for reduced susceptibility to the immunosuppressive tumor microenvironment.** By editing one or more genes on the CAR-T cells, such as PD-1 or LAG-3, we prevent the tumor microenvironment from dampening T cell response, potentially preventing premature exhaustion of the CAR-T cells.

The figure below shows the results of proof-of-concept experiments that demonstrate the ability of base editing to make simultaneous multiplex edits with very high efficiencies and without the generation of chromosomal rearrangements. The panel on the left of the figure below shows the editing of three genes (ß2M, PD1 and TRAC) with very high efficiencies (85% to 95%). In these experiments, we saw no significant loss of efficiency between the editing of a single gene and the simultaneous editing of three genes. The high level of genetic editing resulted in the expected loss of expression of the corresponding proteins on the surface of the cells, as shown by the panel in the middle of the figure below, which demonstrates that 95% of cells achieved complete loss of CD3 (TRAC gene) and of ß2M proteins.



Importantly, the table in the figure below shows no chromosomal rearrangements, as detected by a sensitive method (UDiTaS™) following editing with the C base editor. By contrast, in Cas9 nuclease-treated cells, chromosomal rearrangements were readily detected.

No detectable translocations in triple-edited cells for CBE as compared to Cas9 (N = 3 donors)*

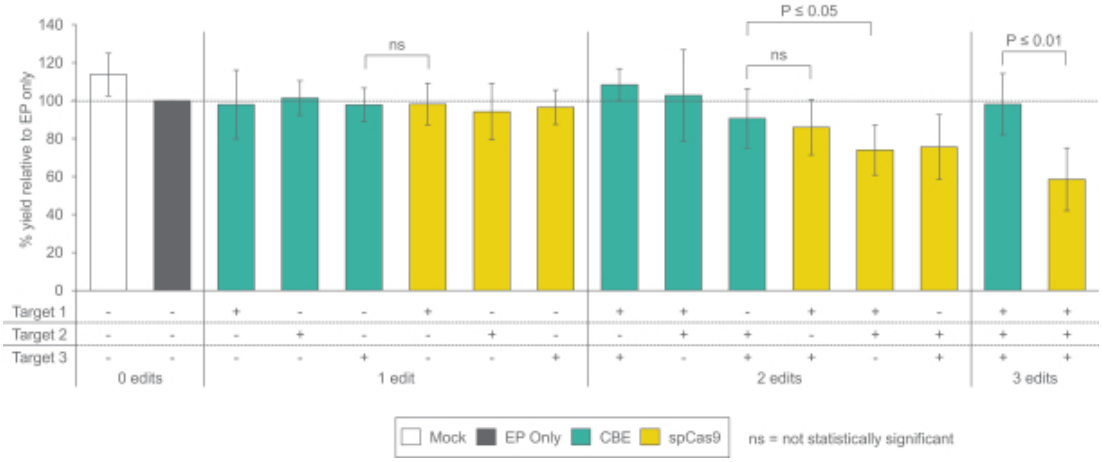


Type	Gene [Fragment]	Control (%)	CBE-treated (%)	Cas9-treated (%)
On target modification (% C→T or indels)	B2M	0	89.9%	53.0%
	TRAC	0	97.9%	77.2%
	PDCD1	0	89.1%	55.2%
Genomic rearrangement products (% rearranged)	B2M [A] / TRAC [A]	0	**0**	**0.9%**
	B2M [A] / TRAC [B]	0	**0**	**0.4%**
	B2M [A] / PDCD1 [A]	0	**0**	**1.6%**
	B2M [A] / PDCD1 [B]	0	**0**	**0.5%**
	B2M [B] / TRAC [A]**	0	**0**	**0.5%**

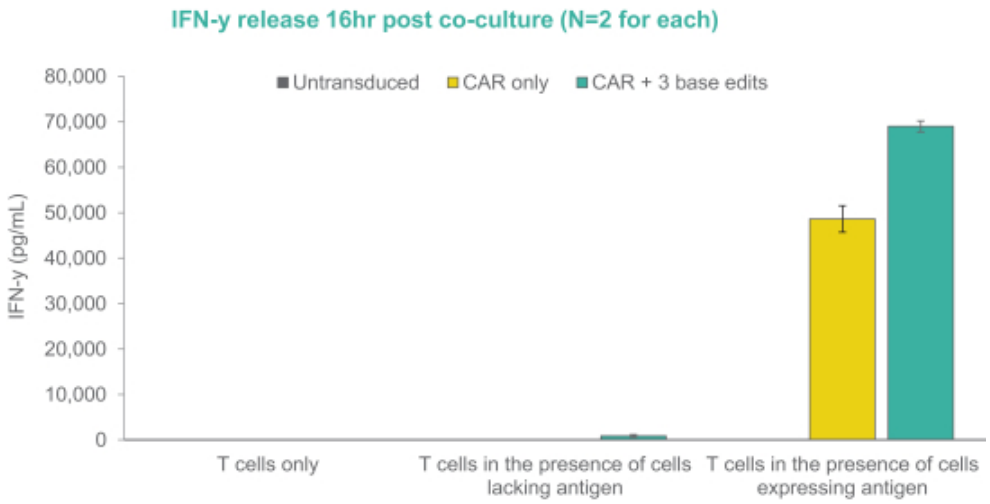
* Lower limit of detection for rearrangements of 0.1%; ** B2M-B only measurable if translocation includes local rearrangement in B2M; B2M = beta 2 macroglobulin gene; TRAC = T-cell receptor alpha constant chain gene; PDCD1 = programmed cell death protein 1 gene

Notably, as shown in the figure below, nuclease-treated cells also demonstrated a growth deficit compared to controls, as the number of simultaneous edits rises. By contrast, base edited cells grew normally, consistent with a potentially more efficient manufacturing process for base edited cells.

Cell yield relative to electroporation (EP) control (N=6)



Finally, as shown in the figure below, the triple-edited cells were highly functional in *in vitro* assays that measured secreted interferon gamma, a biomarker of T cell activity. High levels of interferon were only released after the CAR-T cells interacted with cells expressing the targeted antigen and not with cells lacking the antigen, demonstrating the functional recognition of the antigen by the CAR.



Our initial CAR-T therapeutic programs

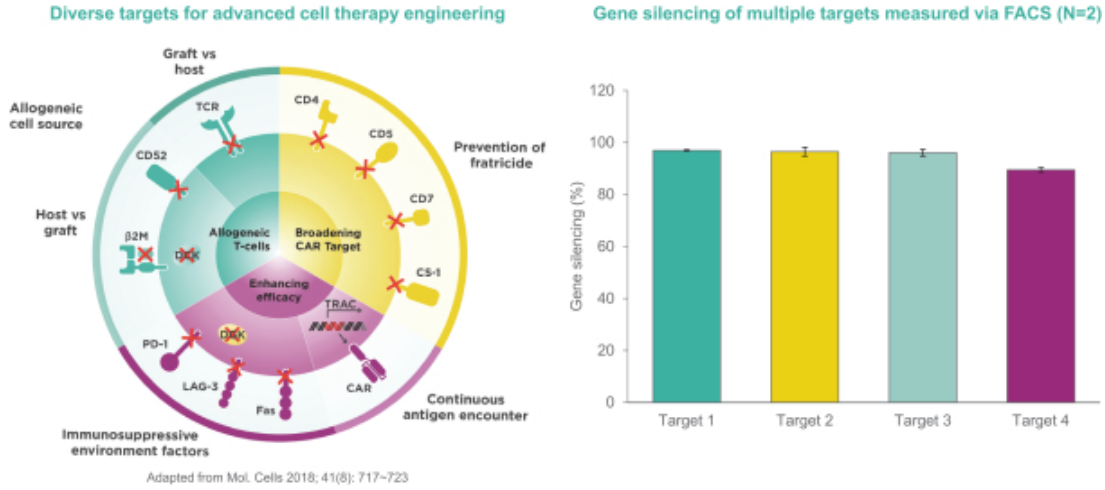
We are leveraging our highly efficient multiplex base editor technology to generate advanced allogeneic CAR-T cells with four to five simultaneous base edits in addition to the insertion of the CAR. Our initial focus will be on hematologic malignancies, and we are developing allogeneic CAR-T product candidates that have the opportunity to simultaneously target at least two tumor antigens to potentially minimize tumor escape. We intend to leverage collaborations with one or more academic institutions experienced in CAR-T therapy to advance these programs.

The initial indications that we plan to target with these product candidates are relapsed, refractory, pediatric T-cell Acute Lymphoblastic Leukemia, or T-ALL, and pediatric Acute Myeloid Leukemia, or AML. While several trials are ongoing with CAR-T or bispecific antibody product candidates for T-ALL and AML, we do not believe that any of the approaches have all of the attributes of product candidates that are enabled by our multiplex editing. We believe that our approach has the potential to produce higher response rates and deeper remissions than existing approaches. Longer term, expansion from pediatric into adult populations with either T-cell malignancies or AML may represent additional opportunities for these product candidates.

The highly-engineered CAR-T product candidates we are developing for T-ALL and AML include the following simultaneous edits:

- **Prevent graft-vs-host.** Editing out the TCR to ensure that the CAR-T cell only attacks the CAR antigen on the tumor and not the patient's healthy cells.
- **Enable allogeneic cell source.** Another edit to enable the use of healthy donor cells.
- **Minimize interference by the tumor microenvironment.** An additional edit to minimize exhaustion by the T cell and prolong efficacy for attacking the tumor.
- **Prevent fratricide.** Additional edits to eliminate antigens that are shared between malignant cells and CAR-T cells, to prevent fratricide for T-ALL.

In the below figure, the image on the left shows some of the potential targets that may be edited to produce advanced product attributes, and the chart on the right shows the efficiency of silencing various target genes using multiplex editing.



Next Steps

We are in the process of finalizing the selection and evaluation of the CAR antigens for the combination product candidates we are developing in T-ALL and AML, testing cell killing and T cell activation in the presence of tumor cells. We then plan to conduct *in vivo* studies of our CAR-T product candidates in animal models of these diseases. We have engaged with reputable CMOs to develop the manufacturing process for the guide RNA, the base editor, and the final clinical drug candidate to support our IND-enabling studies and, eventually, the filing of the IND. We plan to conduct clinical studies at sites both in the United States and Europe and to have pre-IND, or equivalent, engagements with the relevant authorities to ensure that our plans can successfully support IND filings or equivalent.

Expansion opportunities in advanced cell therapy pipeline beyond our initial product candidates

We believe the versatility of our base editing platform positions us to rapidly expand our portfolio of advanced cell therapies beyond the initial product candidates we may develop. Applying the same multiplex editing principles to other validated and emerging hematologic targets potentially will allow us to directly benefit from the learnings of our two initial programs. Furthermore, the ability to create CAR-T products with numerous edits to checkpoints and other immune signaling/microenvironment receptors could also unlock solid tumors, a much larger opportunity that has been difficult to target with existing CAR-T therapies.

Beyond CAR-T in hematology and solid tumors, other kinds of cell therapies could also benefit from these same approaches. In oncology, CAR-NK cells, TCR-modified T cells, and iPS cells are likely to expand the therapeutic landscape of engineered cell therapies; each could also benefit from the multiplex editing strategies described above. Beyond oncology, engineered immune cells may be useful for autoimmune, neurological, and other disorders.

Non-Viral Delivery for Liver Diseases

Alpha-1 Antitrypsin Deficiency

Opportunity

Alpha-1 Antitrypsin Deficiency, or AATD, is a severe inherited genetic disorder that can cause progressive lung and liver disease. AATD is the result of a mutation in the SERPINA1 gene that normally produces secreted

alpha-1 antitrypsin, or AAT. AAT modulates various proteases such as neutrophil elastase, an enzyme that normally fights infections but that can also attack normal lung tissue if not adequately controlled by AAT. The most severe form of AATD arises when a patient has a point mutation in both copies of the SERPINA1 gene at amino acid 342 position (E342K, also known as the “Z” allele). This point mutation causes AAT to misfold, accumulating inside liver cells rather than being secreted, resulting in very low levels (10%-15%) of circulating AAT. As a consequence, the lung is left unprotected from neutrophil elastase, resulting in progressive, destructive changes in the lung, such as emphysema, which can result in the need for lung transplants. The mutant AAT protein also accumulates in the liver, causing liver inflammation and cirrhosis, which can ultimately cause liver failure or cancer and require patients to undergo a liver transplant. It is estimated that approximately 60,000 individuals in the United States have two copies of the Z allele.

Limitations of current approaches

There are currently no curative treatments for patients with AATD. The most common treatment is intravenous protein replacement therapy, where purified human AAT is infused weekly to increase circulating AAT levels. While this treatment may slow the progression of the lung component of the disease, it will not cure the disease and has no protective effect on the liver component caused by the accumulation of the mutant protein.

Recent efforts to use genetic tools to address AATD have included gene therapy, AAT protein knock out, and SERPINA1 gene editing. The high volume of systemic AAT circulation required presents a challenge for gene therapy, particularly given recent data has shown that expression of AAV gene therapies in the liver can wane over time. AAV gene therapies can also be diluted by cell growth over time. AAT knock out with RNAi or gene editing in the liver may ameliorate liver toxicity, but is likely to lower circulating AAT levels and exacerbate the progression of the lung component of the disease. Finally, the use of nuclease-based technology to directly correct the AATD gene is severely limited by the low efficiency of HDR.

Small molecule drugs are also entering development which can bind the Z form of AAT, assisting in partial restoration of AAT secretion and folding. However, the functional effects of the Z protein bound to a small molecule have not yet been characterized, and such therapies would require chronic dosing.

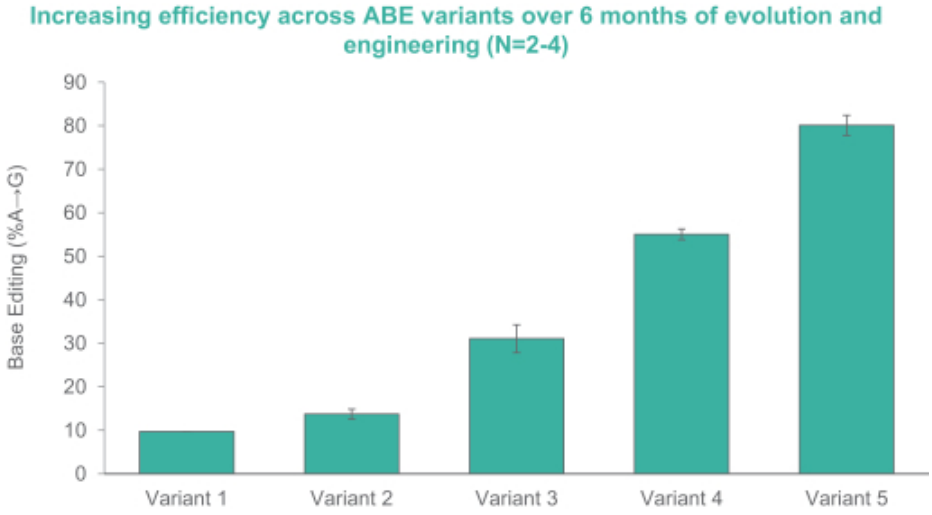
Our approach: Direct correction of the AATD point mutation

With the high efficiency and precision of our base editors, we aim to directly correct the E342K point mutation back to the wild type sequence, an approach that has numerous potential advantages:

- **Ameliorating both lung and liver components of the disease.** Direct correction of SERPINA1 simultaneously addresses both the lung component, by restoring AAT secretion and production, and the liver component, by removing the buildup of toxic AAT protein.
- **One-time treatment.** Unlike chronic therapies such as small molecules or RNAi, our base editor therapy could represent a one-time correction of the disease after transient expression of the base editor in hepatocytes.
- **Permanent editing for life-long effect.** Unlike AAV gene therapies which may decline over time or be diluted by cell growth, the correction of the SERPINA1 gene would represent a permanent life-long genetic modification. It would also be passed on through cell divisions during normal growth, thereby enabling treatment of young children.
- **Natural regulation.** Direct correction of the SERPINA1 gene would also benefit from normal endogenous regulation, restoring normal production and levels of AAT over time.

- **Survival advantage of edited cells.** Because of the toxicity of mutant AAT proteins, liver cells that are successfully corrected in this way may have a survival advantage in the liver and, over time, make up an increasing proportion of total liver cells.

Using molecular evolution techniques and structural biology insights, two of the core strengths of our platform discovery efforts, in six months, we have developed a novel base editor capable of correcting the E342K mutation in human cells, increasing the editing efficiency from 10% to 80% *in vitro*, as shown in the figure below.



Next Steps

We are currently conducting preclinical studies to confirm the ability to correct the E342K sequence in existing and enhanced mouse models of AATD. We are also optimizing LNP formulations in mice and in NHPs. These LNPs will encapsulate an mRNA coding for the base editor and the guide RNA targeting the specific SERPINA1 mutation for clinical delivery. The final selected formulation for clinical delivery will then be tested in IND-enabling studies before initiating clinical development in patients with AATD.

Glycogen Storage Disease 1a

Opportunity

Glycogen Storage Disease Type 1a, also known as Von Gierke disease, is an inborn disorder of glucose metabolism caused by mutations in the G6PC gene, which codes for the glucose-6-phosphatase protein, or G6Pase. Deficiencies in G6Pase activity result in hypoglycemia, or low blood glucose levels, which can be fatal if patients do not adhere to a strict regimen of slow-release forms of glucose, administered every one to four hours (including overnight). The inability to release glucose from the liver also leads to the accumulation of a multi-branched form of glucose, known as glycogen, in the liver and kidneys, resulting in functional impairment of these organs. Hepatocellular adenomas are a common sequaele in patients with GSD1a. Research has shown that approximately 10% of individuals with GSD1a, affected by hepatocellular adenomas, are at risk of progressing to malignant hepatocellular carcinomas. GSD1a occurs in approximately 1:100,000 births worldwide.

Limitations of current approaches

There are no disease-modifying therapies available for patients with GSD1a. Current approaches to treatment in development include AAV gene therapy and mRNA therapy to add back functional G6PC at the DNA and RNA level, respectively. In addition, gene editing approaches are being developed to correct the G6PC gene. AAV gene therapy to the liver can wane over time leading to uncertain durability of expression, a key concern in a disease for which life-long expression of G6PC in a high proportion of liver cells is needed to control systemic glucose metabolism during fasting periods. In addition, AAV gene therapies lack the endogenous regulation of this critical metabolic enzyme. Furthermore, the ability to treat young children may be limited by the dilution of the transgene as the patients grow. mRNA replacement therapy is being explored, but would also require chronic treatment. Lastly, gene editing to correct the G6PC gene has been limited by the low efficiency of HDR.

Our approach: Direct correction of prevalent GSD1a point mutations

Our approach to treating patients with GSD1a is to apply base editing via LNP delivery to repair the two most prevalent mutations that cause the disease, R83C and Q347X. It is estimated that these two point mutations account for 900 and 500 patients, respectively, in the United States, representing approximately 59% of all GSD1a patients. Animal studies have shown that as little as 11% of normal G6Pase activity in liver cells is sufficient to restore fasting glucose; however, this level must be maintained in order to preserve glucose control and alleviate other serious, and potentially fatal, GSD1a sequelae. Our approach to directly correcting these point mutations with base editors has several potential advantages:

- **One-time treatment.** We believe that base editing has the potential to provide a one-time correction of the disease after transient expression of the base editor in hepatocytes.
- **Permanent editing for life-long effect.** We believe the correction of the G6PC gene by base editing would be permanent, creating a persistent, life-long genetic modification that would be passed on through cell division during normal growth, enabling treatment of young children.
- **Natural regulation.** Direct correction of the G6PC gene at its locus would restore the natural control of expression of the G6Pase protein, which needs to be tightly coordinated to maintain effective glucose control during fast and fed cycles.

We have identified product candidates that can correct up to 80% of the alleles in cells harboring the Q347X point mutation and approximately 30% in cells harboring the R83C mutation, as shown in the figure below. Correction of at least 11% is expected to be clinically relevant and potentially disease modifying in this disease.

Next Steps

Our current efforts are aimed at confirming the precise correction of the R83C and the Q347X mutations in transgenic mice harboring the specific mutations. In addition, we are optimizing LNP formulations, which will encapsulate an mRNA coding for the base editor and the guide RNA targeting the specific G6PC mutations, for clinical delivery. The final formulation for clinical delivery will be selected and tested in IND-enabling studies before initiating clinical development for GSD1a patients with these specific mutations.

Expansion opportunities in non-viral delivery pipeline

Once we have established the ability to deliver base editors via LNPs to hepatocytes, we could potentially advance other base editing liver programs to the clinic quickly. This highlights the versatility and modularity of our platform that potentially enables the creation of new product candidates by merely changing the guide RNA. The development of additional LNP formulations may also unlock tissues beyond the liver.

Finally, we have entered into a strategic collaboration with Verve Therapeutics to investigate gene editing strategies to modify genes associated with an increased risk of coronary artery diseases, initially focusing on the highest risk patient populations.

Viral Delivery for Ocular and CNS Disorders

Stargardt Disease

Opportunity

Stargardt disease is an inherited disorder of the central region of the retina, called the macula, which is responsible for sharp, central vision. The disease causes progressive degeneration of the macula, typically resulting in vision loss typically beginning in adolescence, and ultimately leading to central and night vision blindness.

The most common form of Stargardt disease is caused by autosomal recessive mutations in the ABCA4 gene, leading to abnormal accumulation of lipofuscin, a fatty yellow pigment, in retinal cells. This biochemical defect

eventually leads to the death of photoreceptors, which are the cells that convert light into the electrical signals that are transmitted to the brain.

The most prevalent mutation in the ABCA4 gene that leads to Stargardt disease is the G1961E point mutation. Approximately 5,500 individuals in the United States are affected by this mutation.

Limitations of current approaches

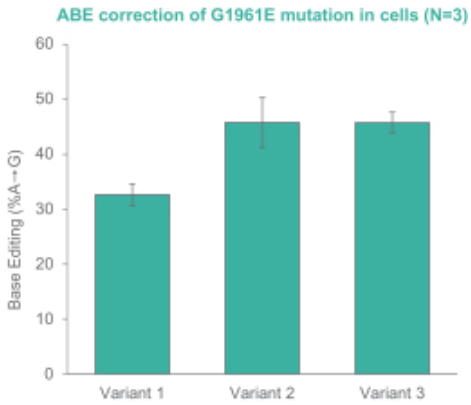
There are currently no approved therapies for Stargardt disease. Although AAV gene therapy has been shown to be effective in other retinal disorders, the ABCA4 gene cannot be packaged into a single AAV vector due to its large size.

Approach: Direct correction of the most prevalent Stargardt mutation

Our base editing approach is to repair the G1961E point mutation in the ABCA4 gene. Disease modeling using tiny spot stimuli, or light stimuli through holes that are equivalent in size to a single photoreceptor cell, suggests that only 12%-20% of these cells are sufficient to preserve vision. We anticipate, therefore, that editing percentages in the range of 12%-20% of these cells would be disease-modifying, since each edited cell will be fully corrected and protected from the biochemical defect. Our base editing approach has several key potential advantages:

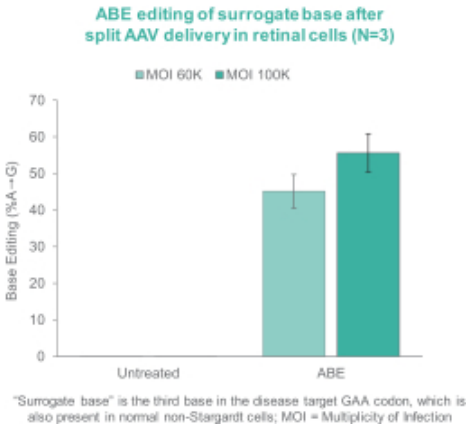
- **No limitation of gene size.** Because we are editing the gene in its natural environment, we only need to deliver the editor to correct the point mutation. It may be challenging to deliver this large, membrane-bound protein using existing gene therapy approaches.
- **One-time treatment.** Our base editor therapy could represent a one-time correction of the disease.
- **Natural regulation.** Direct correction of the ABCA4 gene would benefit from normal endogenous regulation, restoring normal production and levels of the ABCA4 protein, which is critical for eliminating a key toxic metabolic byproduct in photoreceptor cells.

We have identified a base editor that is able to edit approximately 45% of the alleles in recombinant cells carrying the human mutated sequence, as shown in the figure below.



Given that the base editor is larger than the packaging capacity of a single AAV, we use a split AAV system that delivers the base editor via two AAV vectors. Once inside the cell, the two halves of the editor are recombined to create a functional base editor. As shown in the figure below, in human retinal pigment epithelial cells, or

ARPE-19 cells, we have demonstrated approximately 50% editing of a surrogate base positioned immediately adjacent to the target base, which would be present in a diseased cell. If edited, this surrogate base would result in a synonymous change (i.e., no change to the amino acid).



Next Steps

We will progress towards clinical studies by testing the AAV split editors in non-human primate studies, where the editors will be delivered via sub-retinal injection to mimic the anticipated route of administration in the clinic. A retinal-specific protomer is also being tested to express the editor in the retina and minimize expression in other organs, in case of leakage. We also plan to test the editor for editing efficiency in human retinal organoids. We will subsequently conduct IND-enabling studies before initiating clinical development in Stargardt patients carrying the G1961E mutation. Finally, we are exploring the development of base editing of additional commonly occurring point mutations in Stargardt to expand the addressable patient population.

Expansion opportunities in viral delivery pipeline

Once we have established delivery to the eye of a base editor in an AAV, there are several other diseases of the eye where our editing technologies could be applied. By merely changing the guide RNA, we may be able to rapidly create new product candidates using the same AAV production and delivery approaches pioneered in the Stargardt program.

The ability to deliver base editors with AAV may also open up therapeutic opportunities in other tissues where AAV has been a clinically validated delivery approach. Beyond the eye, we are investigating the opportunity to edit numerous genes responsible for certain diseases of the CNS.

Future horizons in precision genetic medicine technologies

Building on the expertise of our academic founders and our innovative research culture, we plan to explore new and complementary technologies in base editing, gene editing, and genetic medicine over the long term to advance a broad portfolio across multiple delivery pipelines. As part of this strategy, we have acquired, through a license with The Broad Institute, two additional complementary technologies – RNA base editing and the Cas12b nuclease family.

Our RNA base editing technology is a two-part modular system using an RNA-directed CRISPR protein for targeting RNA strands and a deaminase for editing. This CRISPR protein, known as Cas13, is modified so that it cannot break the RNA strand, and is fused to a deaminase capable of making a single base edit at a specific

target location within the RNA strand. This enables us to change protein expression, potentially correcting or altering the function of the resulting protein and correcting disease. Our RNA base editing technologies include the REPAIR™ system for A-to-I editing, as well as the RESCUE™ system for C-to-U editing. When delivered through a long-lasting viral vector, RNA base editing may provide a complementary approach to DNA base editing for permanent correction of gene expression. Additionally, RNA editing could potentially be beneficial in situations where a transient change is desirable, such as in regenerative medicine.

Access to the Cas12b nuclease family provides two potential strategic advantages for our portfolio. First, the distinct PAM sequence and conformation of Cas12b allows us to create DNA base editors that can bind to different target sites in the genome, further expanding the range of sites that we can edit. Second, having a nuclease allows us to make “cut” edits, which may be appropriate for some applications that require a double-stranded break.

Leveraging our deep scientific expertise, we also expect to develop insights into other innovative editing and delivery modalities. We believe that our delivery, manufacturing, and development capabilities could position us to effectively evaluate and rapidly develop such novel technologies and further extend our leadership in the field of genetic medicine.

Competition

The pharmaceutical and biotechnology industries, including the gene therapy and gene editing fields, are characterized by rapidly advancing technologies, intense competition, and a strong emphasis on intellectual property. While we believe that our differentiated technology, scientific expertise, and intellectual property position provide us with competitive advantages, we face potential competition from a variety of companies in these fields. There are several other companies utilizing CRISPR/Cas9 nuclease technology, including Caribou Biosciences, Editas Medicine, CRISPR Therapeutics, and Intellia Therapeutics. Several additional companies utilize other nuclease-based genome editing technologies, including Zinc Fingers, Arcuses, and TAL Nucleases, including Sangamo Biosciences, Precision BioSciences, and bluebird bio. In addition, we face competition from companies utilizing gene therapy, oligonucleotides, and CAR-T therapeutic approaches.

Any product candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future that are approved to treat the same diseases for which we may obtain approval for our product candidates. This may include other types of therapies, such as small molecule, antibody, and/or protein therapies.

In addition, many of our current or potential competitors, either alone or with their collaboration partners, have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials and approved products than we do today. Mergers and acquisitions in the pharmaceutical, biotechnology and gene therapy industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. We also compete with these companies in recruiting, hiring and retaining qualified scientific and management talent, establishing clinical trial sites and patient registration for clinical trials, obtaining manufacturing slots at contract manufacturing organizations, and in acquiring technologies complementary to, or necessary for, our programs. Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, particularly if they represent cures, have fewer or less severe side effects, are more convenient, or are less expensive than any products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market

position before we are able to enter the market. The key competitive factors affecting the success of all of our programs are likely to be their efficacy, safety, convenience, and availability of reimbursement.

Intellectual property

Our success depends in part on our ability to obtain and maintain proprietary protection for our platform technology, our programs, and know-how related to our business, defend and enforce our intellectual property rights, in particular, our patent rights, preserve the confidentiality of our trade secrets, and operate without infringing, misappropriating or otherwise violating any valid and enforceable intellectual property rights of others. We seek to protect our proprietary position by, among other things, exclusively licensing and filing U.S. and certain foreign patent applications related to our platform technology, existing and planned programs, and improvements that are important to the development of our business, where patent protection is available. Notwithstanding these efforts, we cannot be sure that patents will be granted with respect to any patent applications we have licensed or filed or may license or file in the future, and we cannot be sure that any patents we have licensed or patents that may be licensed or granted to us in the future will not be challenged, invalidated, or circumvented or that such patents will be commercially useful in protecting our technology. For more information regarding the risks related to our intellectual property, please see “Risk Factors—Risks Related to Our Intellectual Property.”

Our wholly owned and our in-licensed patents and patent applications cover various aspects of our base editing platform and our programs, including:

- C-to-T DNA base editors
- A-to-G DNA base editors
- A-to-I RNA base editors, or REPAIR
- C-to-U RNA base editors, or RESCUE
- CRISPR/Cas12b systems for nuclease editing
- Novel guide RNA sequences
- Systems and methods for increasing the specificity of base editing
- Multiplex base editing in immune cells *ex vivo*
- Methods for evaluating base editing specificity
- Therapeutic methods
- Delivery modality

We also have an option to license patents and patent applications relating to CRISPR/Cas9 systems. We intend to continue to pursue, when possible, additional patent protection, including composition of matter, method of use, and process claims, directed to each component of our platform technology and the programs in our portfolio. We also intend to obtain rights to delivery modalities through one or more licenses from third parties and to protect our own intellectual property to delivery modalities.

As of June 30, 2019, we owned approximately 21 pending U.S. provisional patent applications and approximately five pending international patent applications, or PCT applications. Our owned patent applications are related to our DNA base editing technology, including claims to base editor variants with enhanced activities (e.g., nucleobase deaminating activity) or novel properties (e.g., PAM recognition), methods of using such base editors, methods of using such base editors for therapeutic indications, multiplex base editing in immune cells *ex vivo*, guide RNAs that target base editors to therapeutically relevant DNA sequences, and methods for evaluating base editing specificity. One of these PCT applications is co-owned with The Broad Institute, or the Broad, and President and Fellows of Harvard College, or Harvard. If issued as U.S. patents, and if the appropriate maintenance fees are paid, the U.S. patents would be expected to expire between 2039 and 2040, excluding any additional term for patent term adjustments or patent term extensions.

DNA Base Editing

As of June 30, 2019, we in-licensed approximately 14 U.S. patents, approximately 21 pending U.S. patent applications, 8 pending PCT applications, and 89 pending ex-U.S. patent applications, related to DNA base editing from the Broad, Harvard, Editas Medicine Inc., or Editas, and Bio Palette Co., Ltd., or Bio Palette. The patents and patent applications outside of the United States were filed primarily in Europe, Japan, and China, although some of our in-licensed patent families were filed in a larger number of countries. The patents and applications from our in-licensed portfolio for DNA base editing include claims to novel base editors, claims to engineered deaminase enzymes (e.g., evolved TadA) used in the base editors, compositions including the base editor or engineered deaminase as a component, methods of using such base editors, including methods of using such base editors for therapeutic indications, guide RNAs that target base editors to therapeutically relevant DNA sequences. The in-licensed patents and applications also cover various aspects related to the platform technology, including base editing systems that employ *S. pyogenes* Cas9, *S. aureus* Cas9, Cas9 PAM variants, inactive forms of Cas9, and/or Cas9 nickases, and systems for delivery of base editors. Our current in-licensed patents and patent applications on DNA base editing, if the appropriate maintenance fees are paid, are expected to expire between 2034 and 2038, excluding any additional term for patent term adjustments or patent term extensions (or the corresponding foreign equivalent).

RNA Base Editing

As of June 30, 2019, we in-licensed approximately 2 pending U.S. patent applications, 9 pending PCT applications, and 4 pending ex-U.S. patent applications, related to RNA base editing from the Broad. The patents and patent applications outside of the United States were filed in Australia, Canada, Europe, and Russia. The patents and applications from our in-licensed portfolio for RNA base editing include claims to novel base editors, compositions including the base editor as a component, guide RNAs that target base editors to therapeutically relevant RNA sequences, and methods of using such base editors, including methods of using such base editors for therapeutic indications. Our current in-licensed patents and patent applications on RNA base editing, if the appropriate maintenance fees are paid, are expected to expire between 2036 and 2038, excluding any additional term for patent term adjustments or patent term extensions (or the corresponding foreign equivalent).

CRISPR/Cas12b

As of June 30, 2019, we in-licensed approximately 2 pending U.S. patent applications, 3 pending PCT applications, and 4 pending ex-U.S. patent applications, related to editing using Cas12b from the Broad. The patents and patent applications outside of the United States were filed in Australia, Canada, Europe, and Russia. The patents and applications from our in-licensed portfolio for Cas12b editing include claims to methods of using Cas12b to modify DNA (e.g., nuclease cleavage of DNA) and engineered and/or non-naturally occurring compositions including Cas12b as a component. Our current in-licensed patents and patent applications on Cas12b base editing, if the appropriate maintenance fees are paid, are expected to expire between 2036 and 2039, excluding any additional term for patent term adjustments or patent term extensions (or the corresponding foreign equivalent).

Rest of Platform

As of June 30, 2019, we in-licensed approximately 9 U.S. patents, approximately 11 pending U.S. patent applications, 2 pending PCT applications, and 59 pending ex-U.S. patent applications, related to the balance of our platform from universities and institutions. The patents and patent applications outside of the United States were filed primarily in Europe, Japan, and China, although some of our in-licensed patent families were filed in

a larger number of countries. The patents and applications from our in-licensed portfolio for the balance of our platform include claims to compositions and methods for delivery of charged base editor proteins into cells, modification and improvements to the base editing systems including improvements to the nucleotide binding protein component, guide RNA component and base editing enzyme component of the base editing complex, as well as methods for evaluating gene targeting and base editing efficiency. Our current in-licensed patents and patent applications on the balance of our platform, if the appropriate maintenance fees are paid, are expected to expire between 2034 and 2038, excluding any additional term for patent term adjustments or patent term extensions (or the corresponding foreign equivalent).

CRISPR/Cas9 and CRISPR/Cas12a

We have a nonexclusive license to conduct research activities and an option to exclusively license certain patents and patent applications directed to Cas9 and Cas12a from Editas, who in turn has licensed such patents from various academic institutions. In the case of Cas9, a number of the U.S. patents are subject to an interference declared by the Patent and Trademark office, and a number of the European patents are the subject of one or more oppositions. For more information regarding the risks related to our intellectual property, please see “Business—Intellectual Property—Intellectual Property Licenses” and “Risk Factors—Risks Related to Our Intellectual Property.”

The term of individual patents depends upon the legal term for patents in the countries in which they are granted. In most countries, including the United States, the patent term is 20 years from the earliest claimed filing date of a non-provisional patent application in the applicable country. However, the actual protection afforded by a patent varies from country to country, and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory-related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patent. In the United States, a patent’s term may, in certain cases, be lengthened by patent term adjustment, or PTA, which compensates a patentee for administrative delays by the USPTO in examining and granting a patent, or may be shortened (e.g., if a patent is terminally disclaimed over a commonly owned patent having an earlier expiration date). In some instances, such a PTA may result in a U.S. patent term extending beyond 20 years from the earliest date of filing a non-provisional patent application related to the U.S. patent. Patent term extensions, or PTE, under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly known as the Hatch-Waxman Act, are also possible for patents that cover an FDA-approved drug as compensation for the patent term lost during the FDA regulatory review process. The Hatch-Waxman Act permits a PTE of up to five years beyond the expiration of the patent. The length of the PTE is related to the length of time the drug is under regulatory review. PTE cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only one patent applicable to an approved drug, a method for using it, or a method of manufacturing it, may be extended. Similar provisions are available in Europe and certain other jurisdictions to extend the term of a patent that covers an approved drug. In the future, if our products receive regulatory approval, we may be eligible to apply for PTEs on patents covering such products, however there is no guarantee that the applicable authorities, including the FDA in the United States, will agree with our assessment of whether such PTE should be granted, and if granted, the length of such PTE. For more information regarding the risks related to our intellectual property, please see “Risk Factors—Risks Related to Our Intellectual Property.”

We also rely on trade secrets, know-how, continuing technological innovation, and confidential information to develop and maintain our proprietary position and protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection. We seek to protect our proprietary technology and processes, in part, by confidentiality agreements with our employees, consultants, scientific advisors, and contractors. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information

technology systems. While we have implemented measures to protect and preserve our trade secrets, such measures can be breached, and we may not have adequate remedies for any such breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. For more information regarding the risks related to our intellectual property, please see “Risk Factors—Risks Related to Our Intellectual Property.”

Trademarks

As of June 30, 2019, we owned two trademark applications for BEAM THERAPEUTICS with the Patent and Trademark Office.

As of June 30, 2019, we in-licensed 5 registered ex-U.S. trademarks, 18 trademark applications, including approximately two pending U.S. trademark applications and 16 pending ex-U.S. trademark applications, for the use of REPAIR™ and RESCUE™ from the Broad.

Intellectual property licenses

We are a party to a number of license agreements under which we license patents, patent applications, and other intellectual property from third parties. The licensed intellectual property covers, in part, CRISPR-related compositions of matter and their use for base editing. These licenses impose various diligence and financial payment obligations on us. We expect to continue to enter into these types of license agreements in the future. We consider the following license agreements to be material to our business.

License Agreement with The President and Fellows of Harvard College

In June 2017, we entered into a license agreement with Harvard, and, in December 2017, we entered into an amendment to such license agreement, pursuant to which we received an exclusive, worldwide, royalty-bearing, sublicensable license under certain patent rights owned or controlled by Harvard to make, have made, offer for sale, sell, have sold and import products in the field of the prevention or treatment of any and all human diseases and conditions, excluding human germline modification and products for non-human animal and plant applications. We refer to this license agreement as the Harvard License Agreement.

The licensed patents are directed, among other things, to C-to-T, A-to-G, and C-to-G base editors, for the treatment of certain diseases and conditions and to base editing, more generally.

Under the Harvard License Agreement, we are required to use commercially reasonable efforts to develop products incorporating the base editing technology covered in the licensed patents, in accordance with a development plan that we prepared and submitted to Harvard. The development plan includes certain development milestones that we are required to meet, as well as the timelines for the completion thereof, and we may update the development plan from time to time in our discretion to better position us to meet such milestones. If we are successfully able to gain regulatory approval in any country to introduce a licensed product into the commercial market in such country, then we are also required to use commercially reasonable efforts to commercialize such licensed product and make such licensed product reasonably available to the public. If we fail to meet any of the deadlines for the development milestones, then Harvard may terminate the Harvard License Agreement, subject to certain exceptions and opportunities for us to cure such failure. Additionally, we are required to initiate a discovery program in accordance with the development plan and development milestones for the development of a licensed product covered by certain sub-categories of licensed patents.

The licenses granted to us under the Harvard License Agreement are expressly subject to certain preexisting rights held by Harvard and certain third parties. For example, certain of the licensed patents were developed by

employees of the Howard Hughes Medical Institute and were subsequently assigned to Harvard but remain subject to a non-exclusive license between Harvard and Howard Hughes, pursuant to which Howard Hughes received a license from Harvard under certain of the licensed patents for research purposes with the right to sublicense to non-profit and governmental entities. In addition, certain of the licensed patents claim or cover inventions resulting from research that was sponsored by the U.S. government, and the U.S. government retains certain rights with respect to such licensed patents under applicable U.S. law. Harvard additionally retains limited rights for itself and for other non-profit research organizations to practice the licensed patents for research, educational, and scholarly purposes. Furthermore, Harvard retains the right, beginning a certain period of time after regulatory approval of any licensed product in the U.S. or certain European countries, to grant third parties the non-exclusive right to develop, manufacture, have manufactured, import, have imported, offer for sale, sell, have sold or otherwise distribute or have distributed such licensed product or an equivalent thereof solely for sale on a locally-affordable basis in certain specified developing countries in which the we do not have plans to seek regulatory approval.

Although the licenses granted to us under the Harvard License Agreement are exclusive, Harvard may grant a license to a third party under the licensed patents to research, develop, and commercialize a product directed to a particular target, or a proposed product, in the field under limited circumstances. If a third party that is not a specified competitor of ours inquires with Harvard for such a license, attempts to enter into a sublicense agreement with us and fails to do so after a certain period of time and presents to Harvard a proposal including certain information describing the proposed development and commercialization of such a proposed product, then Harvard may notify us of such proposal. If we are not researching, developing or commercializing such a proposed product, then we can notify Harvard as to whether we are interested in developing such proposed product, entering into a sublicense agreement with such third party to develop such proposed product, or entering into a sublicense with another third party to develop the same proposed product. If we inform Harvard that we are interested in developing such proposed product, then we will prepare a development plan, similar in scope to the development plan under the Harvard License Agreement, to develop such proposed product. If we inform Harvard that we are interested in entering into a sublicense agreement pursuant to which a third party would receive a sublicense from us under the licensed patents to develop such proposed product, then we will have a specified period of time to enter into such a sublicense agreement and provide reasonable evidence thereof. If we are not researching, developing, or commercializing such a proposed product, fail to provide a development plan, or fail to enter into a sublicense agreement with respect to such proposed product, in each case, within specified time periods, then Harvard may grant a license to the applicable third party under the licensed patents to research, develop, and commercialize such proposed product.

We are permitted to further sublicense our rights under the Harvard License Agreement to third parties, provided that any such sublicense agreement with a third party must remain in compliance with and be consistent with the terms of the Harvard License Agreement, and certain rights granted to us under the Harvard License Agreement can only be sublicensed to *bona fide* collaboration partners who are working with us to develop one or more licensed products. In addition, any such sublicense agreement must include certain customary provisions to ensure our ability to comply with the Harvard License Agreement. We are also responsible for any breaches of a sublicense agreement by the applicable sublicensee, if such breach results in a material breach of the Harvard License Agreement.

In exchange for the licenses granted to us under the Harvard License Agreement, we issued to Harvard 454,545 shares of our common stock. We are also required to pay to Harvard an annual license maintenance fee ranging from low-to-mid five figures to low six figures, depending on the particular calendar year. Harvard is also entitled to receive potential clinical and regulatory milestones in the mid-to-high eight figure range, subject to our receipt of regulatory approval in the U.S., Japan and the European Union. If we undergo a change of control during the term of the Harvard License Agreement, then certain of the milestone payments would be

increased. We paid Harvard a total of $9.0 million upon the completion of our Series A and Series B financings. We may additionally owe Harvard success payments ranging from $5.0 million to a maximum total of $105.0 million.

With respect to the sale of licensed products by us, our affiliates or our sublicensees, Harvard is entitled to receive low single digit royalties on net sales of licensed products until, on a country-by-country basis, the latest of the expiration of (i) the last to expire licensed patent covering the applicable licensed product, (ii) the period of exclusivity associated with such licensed product in such country or (iii) a certain number of years after the first commercial sale of such licensed product in such country. We are entitled to certain reductions and offsets on these royalties with respect to a licensed product in a given country and certain increases in the event we, our affiliates or sublicensees bring patent challenges relating to any licensed patents (subject to a cure period for us to terminate the sublicense that has taken the applicable action). If we sublicense our rights to develop or commercialize a licensed product under the Harvard License Agreement to a third party and we receive non-royalty sublicense income, then Harvard is entitled to a percentage of such consideration, ranging from the high single digits to low double digits depending on the date in which such sublicense agreement is executed and the stage of development our licensed products at such time.

Harvard is responsible for the prosecution and maintenance of all licensed patents, provided that we have customary consultation, comment, and review rights with respect to such prosecution and maintenance activities. We are responsible for Harvard's documented out-of-pocket expenses with respect to such prosecution and maintenance, but if Harvard enters into a license agreement with a third party pursuant to which it grants such third party a license under the licensed patents outside of our field, then Harvard must use reasonable efforts to include a provision in such agreement that provides for an apportionment of prosecution and maintenance costs between us and such third party with respect to such licensed patents. If we choose to no longer pay for the prosecution and maintenance costs of a given licensed patent, then we will be relieved of such payment obligation, but our license with respect to such licensed patent will also terminate.

Unless earlier terminated, the Harvard License Agreement will remain in effect until the later of the last-to-expire valid claim of a licensed patent covering our licensed products or the end of the last to expire royalty term. We may terminate the Harvard License Agreement at our convenience following written notice to Harvard. Either party may terminate the Harvard License Agreement for a material breach of the other party, subject to a notice and cure period. Harvard may also terminate the Harvard License Agreement in the event of our bankruptcy or insolvency or if we fail to procure and maintain insurance. Upon expiration or termination of the Harvard License Agreement, the licenses granted to us will terminate and all rights under the licensed patent rights will revert to Harvard.

License Agreement with Editas Medicine, Inc.

In May 2018, we entered into a license agreement with Editas pursuant to which we received an exclusive (even as to Editas), royalty-bearing, sublicenseable, worldwide license under certain patent rights owned or controlled by Editas related to certain base editing technologies and CRISPR technology to develop, commercialize, make, have made, use, offer for sale, sell and import base editing products for the treatment of human diseases or conditions. We refer to this license agreement as the Editas License Agreement. The license we received is non-exclusive with respect to certain specified targets. Our licensed field excludes the treatment of certain diseases and certain fields of use that have already been licensed to other partners of Editas, provided that our licensed field may expand if the fields licensed to other Editas partners are reduced or are otherwise modified as a result of any termination, expiration, or amendment to Editas' agreements with such partners. In addition, we received a royalty-free, non-sublicenseable, non-exclusive license under a separate set of patent rights owned or controlled by Editas to conduct research activities in our licensed field and for which we have an option to obtain an exclusive license from Editas.

Certain of the patents licensed to us under the Editas License Agreement were licensed to Editas from the Broad and Harvard and certain of the patents for which we have an option to obtain a license were licensed to Editas from the Massachusetts General Hospital, or MGH. Accordingly, the licenses granted to us under the Editas License Agreement are subject to the terms and conditions set forth in each of the license agreements concerning the licensed patents between the Broad, Harvard and Editas, or the Broad/Harvard Head Licenses, and each of the license agreements concerning the patents for which we have an option to obtain a license between MGH and Editas, or the MGH Head Licenses.

As described above, Editas granted us an exclusive option to obtain an exclusive license under certain patents on a patent family-by-patent family basis. If we so exercise the option with respect to a patent family of such optioned patents, then we would receive an exclusive license to such patent family of the same scope as the other patents exclusively licensed to us under the Editas License Agreement. In order to exercise an option with respect to a patent family of these optioned patents we would pay an eight-figure option exercise fee, depending on the date in which particular option is exercised.

Under the Editas License Agreement, we are required to use commercially reasonable efforts to develop a licensed product in our licensed field in each of the U.S., Japan, the United Kingdom, Germany, France, Italy and Spain, including filing the first IND for a licensed product within a certain period of time following the execution of the Editas License Agreement. If we are successfully able to gain regulatory approval in any country for a licensed product, then we are also required to use commercially reasonable efforts to commercialize such licensed product in such country. We also have sole control and responsibility over all regulatory activities with respect to the development of licensed products.

We are permitted to further sublicense certain of our rights under the Editas License Agreement to third parties, provided that any such sublicense agreement with a third party must remain in compliance with and be consistent with the terms of the Editas License Agreement and the Broad/Harvard Head Licenses and MGH Head Licenses, as applicable. We are also responsible for any breaches of a sublicense agreement by the applicable sublicensee and are responsible for all payments due under the Editas License Agreement by operation of any such sublicense. Following the signing of the Editas License Agreement, we obtained the right to further sublicense our rights the licensed patents from Broad and Harvard to third parties, provided that we comply with certain sublicensing requirements under each of the Broad/Harvard Head Licenses as if we were Editas, as well as certain other customary conditions. We have not obtained any such right from MGH allowing us to further sublicense our rights under the licensed patents from MGH to third parties and will require written consent in the event we wish to further sublicense such rights to a third party.

Upon the execution of the Editas License Agreement, we paid Editas an upfront fee of $180,000. We also issued to Editas 1,833,333 shares of our Series A-1 Preferred Stock and 1,222,222 shares of our Series A-2 Preferred Stock. In addition, if any of our commercial, regulatory, development or sales activities with respect to the licensed products triggers a milestone payment or sublicense income that Editas owes under the Broad/Harvard Head Licenses or the MGH Head Licenses, then we are required to pay Editas the full amount of such milestone payment or sublicense income, as applicable, provided that we will not pay Editas for any sublicense income due as a result of the upfront fee we paid to Editas, our issuance of Series A-1 Preferred Stock and Series A-2 Preferred Stock to Editas, or our payment of any option exercise fee to Editas. In addition, we agreed to pay for a portion of the annual license maintenance fees and prosecution and maintenance costs that Editas incurs itself or owes under the Broad /Harvard Head Licenses and the MGH Head Licenses with respect to the licensed patents. The upfront fee, equity issuance, and option exercise payments we make to Editas under the Editas License Agreement constitute both consideration for the licenses granted to us under the Editas License Agreement and reimbursement for prosecution and maintenance costs for the licensed patents.

With respect to the sale of licensed products by us, our affiliates or our sublicensees, we are required to pay to Editas an amount equal to the royalty rates that it owes to the Broad, Harvard, or MGH under its applicable in-licenses, plus an additional low- to mid-single digit royalty on net sales of licensed products, depending on whether such licensed product is covered by an Editas-owned patent and based on the aggregate worldwide net sales of licensed products in a given calendar year. We are entitled to certain reductions and offsets on these royalties with respect to a licensed product in a given country and if Editas is entitled to receive any reductions or offsets in respect to its royalty payment obligations under the relevant Broad/Harvard Head Licenses or MGH Head Licenses, then Editas will use reasonable efforts to avail itself of such reductions, which in turn would reduce our royalty payment obligations under the Editas License Agreement. The royalty term expires on licensed product-by-licensed product and country-by-country basis upon the later of (i) the last-to-expire royalty term in such country under any applicable Broad/Harvard Head License or MGH Head License, and, if such product is covered by a licensed Editas-owned patent, (ii) the date at which such product is no longer covered by a valid claim of a licensed Editas-owned patent in such country.

Editas is responsible for the prosecution and maintenance of all licensed patents, provided that we have certain information, comment, and review rights for certain of the licensed patents.

Unless earlier terminated, the Editas License Agreement will expire on a licensed product-by-licensed product and country-by-country basis on the expiration of the applicable royalty term with respect to such licensed product in such country. We may terminate the Editas License Agreement following written notice to Editas. Either party may terminate the Editas License Agreement for a material breach of the other party, subject to a notice and cure period. Editas may also terminate the Editas License Agreement if we challenge the validity of any of the licensed patents, subject to customary carveouts. Upon expiration or termination of the Editas License Agreement in its entirety or with respect to a family of patents, the licenses granted to us will immediately terminate in its entirety or solely with respect to the expired or terminated patent family, as the case may be; however, if we have the right to terminate the Editas License Agreement due to Editas' material breach of the Editas License Agreement, then in lieu of so terminating the Editas License Agreement, we can elect to reduce our royalty payment obligations under the Editas License Agreement by certain specified percentages.

License Agreement with The Broad Institute, Inc.

In May 2018, our affiliate, Blink Therapeutics Inc., or Blink, entered into a license agreement with the Broad and, in September 2018, Blink and the Broad entered into an amendment to such License Agreement. Under the Broad License Agreement, Blink is granted certain rights to RNA base editing technology, including the RNA editor platforms RESCUE™ and REPAIR™, which use Cas13 linked to a deaminase to deliver single base A-to-I or C-to-U editing of RNA transcripts, respectively, as well as the Cas12b nuclease family of gene editing enzymes.

More specifically, under the Broad License Agreement, the Broad granted Blink an exclusive license under certain patent rights to the extent owned or controlled by the Broad (including via an interinstitutional agreement with the Massachussetts Institute of Technology, or MIT, and Harvard) comprising of (i) an exclusive license under certain patent rights claiming or disclosing novel CRISPR enzymes and systems (including those related to DNA cleaving) or systems, methods and compositions for targeted nucleic acid editing, in each case to exploit products covered by such patents, (ii) an exclusive license under certain product-specific patent rights claiming or disclosing novel CRISPR enzymes and systems, methods and compositions for targeted nucleic acid editing, in each case to exploit base editor products covered by such patents and (iii) an exclusive license under certain patent rights generally related to gene targeting to exploit base editor products covered by such patents.

Under the Broad License Agreement, Blink has also been granted (i) a non-exclusive license under all patents exclusively licensed to Blink under the Broad License Agreement to exploit certain products in our field that were made, discovered, developed or determined to have utility through the use of such patents in a research or discovery program commencing before May 2021 or through the use of transferred materials from the Broad but that are not covered by the licensed patents and (ii) a non-exclusive internal research license under all patents exclusively licensed to Blink. All licenses granted to Blink by Broad exclude human germline modification, the stimulation of biased inheritance of particular genes or, with certain exceptions, traits within a plant or animal population and certain modifications of the tobacco plant and are subject to certain retained rights of the Broad, Harvard and MIT and the U.S. federal government. The Broad additionally retains limited rights for itself, Harvard and MIT and for other non-profit research organizations to practice the licensed patents for research, educational, and scholarly purposes.

Under the Broad License Agreement, Blink is required to use commercially reasonable efforts to develop licensed products in accordance with a development plan that Blink prepared and submitted to the Broad. The development plan includes certain development milestones that Blink is required to meet, as well as the timelines for the completion thereof, and Blink may update the development plan from time to time if Blink believes, in its good faith judgment, that such update is needed in order to improve Blink's ability to meet such development milestones. Blink will not be able to delay such development milestone timelines without providing a reasonable explanation and plan to the Broad, and provided further that Broad's approval of the explanation and plan in its reasonable discretion is required for any milestone timeline extension of more than a specified number of years. If Blink is successfully able to gain regulatory approval in any country to introduce a licensed product into the commercial market in such country, then Blink is also required to use commercially reasonable efforts to commercialize such licensed product and make such licensed product reasonably available to the public.

Additionally, Blink is required to use commercially reasonable efforts to pursue the viability of the technology covered, claimed or disclosed in certain sub-categories of licensed patents and must initiate a discovery program for the development of a licensed product covered by a valid claim, or otherwise generally enabled, by the use of such sub-category of the licensed patents during a certain period of time following the execution of the Broad License Agreement and submit an updated development plan and development milestones reasonably acceptable to the Broad for such sub-category of the licensed patents within such period of time. If Blink fails to use commercially reasonable efforts to pursue the viability of such technology or to initiate a discovery program or to submit an updated development plan in the specified time period then the license under such sub-category of the licensed patents will terminate and, if such sub-category of the licensed patents consists of base editor patent rights, Blink's rights with respect to gene targeting licensed patents shall convert to non-exclusive so that such rights may be licensed for use to such terminated base editor licensed patents.

The Broad, MIT, and Harvard also retain the right to grant further licenses under specified circumstances to third parties, other than specified entities, that wish to research, develop, and commercialize a product that would otherwise fall within the scope of our exclusive license grant from the Broad and Harvard pursuant to Broad, Harvard and MIT's inclusive innovation model. If, after a specified period of time, such a third party inquires with the Broad for such a license and presents to the Broad a proposal including information describing the proposed development and commercialization of such a proposed product, then the Broad may notify Blink of the request and requester, and the nature of the specific proposed product. The Broad is not required to share any other information provided by the requester to Blink in connection with the inclusive innovation model. If Blink is not researching, developing or commercializing such a proposed product, then Blink can notify the Broad as to whether in good faith it is interested in developing such proposed product, entering into a sublicense agreement with such requesting third party to develop such proposed product, or entering into a sublicense with another third party to develop such proposed product. If Blink informs the Broad

that it is interested in developing such proposed product, then Blink will prepare a development plan, similar in scope to the development plan under the Broad License Agreement, to develop such proposed product and must commence the development program for such proposed product within a specified period. If Blink informs the Broad that it is interested in entering into a sublicense agreement pursuant to which the inquiring third party or another third party would receive a sublicense from Blink under the licensed patents to develop such proposed product, then Blink may enter into such a sublicense agreement and provide reasonable evidence thereof during the period. If Blink declines to conduct the foregoing activities or does not complete such activities within the specified period, which period is reduced by the period of time the requesting third party has previously negotiated with Blink, then the Broad may grant a license to the applicable third party under the licensed patents to research, develop, and commercialize such proposed product.

Blink is permitted to sublicense the licensed patents to affiliates and third parties, provided that any such sublicense agreement must remain in compliance with and be consistent with the terms of the Broad License Agreement. In addition, any such sublicense agreement must include certain customary provisions to ensure Blink's ability to comply with the Broad License Agreement. Blink is also responsible for any breaches of a sublicense agreement by the applicable sublicensee and is responsible for all payments due under the Broad License Agreement by operation of any such sublicense.

As partial consideration for the rights granted under the Broad License Agreement, the Broad received 1,940,000 shares of Blink's common stock. The shares issued to the Broad were exchanged into 3,880,000 shares of our common stock in connection with our acquisition of Blink on September 25, 2018.

Under the Broad License Agreement, Blink is also required to pay the Broad an annual license maintenance fee ranging from the low- to mid-five figures to the low-six figures, depending on the particular calendar year. The Broad is also entitled to receive clinical and regulatory milestones totaling in the mid-to-high eight figure range. We paid the Broad a total of $9.0 million upon the completion of our Series A and Series B financings. Blink may additionally owe the Broad success payments ranging from $5.0 million to a maximum total of $105.0 million.

Blink is also required to pay royalties in the low single digits for products covered by the licensed patents with such royalty reduced by a certain percentage for products enabled by the licensed patents, but not covered by the licensed patents. The royalty rate payable by Blink is subject to customary reductions and offsets on these royalties with respect to a product in a given country. The royalty term for a product in a country will terminate on the later of the expiration of (i) the last to expire licensed patent covering the applicable product, (ii) the period of exclusivity associated with such product in such country or (iii) a certain period of time after the first commercial sale of such product in such country. If Blink sublicenses its rights to develop or commercialize a licensed product under the Broad License Agreement to a third party and receives non-royalty sublicense income, then the Broad is entitled to a percentage of such consideration, ranging from the high single digits to low double digits, dependent on the development stage of products under the Broad License Agreement at the time of sublicense execution.

The Broad is responsible for the prosecution and maintenance of all licensed patents, provided that Blink has certain consultation, comment, and review rights with respect to such prosecution and maintenance activities of exclusively licensed patent rights.

Unless earlier terminated, the Broad License Agreement will remain in effect until the later of the last-to-expire valid claim of a licensed patent covering our licensed products or the end of the last to expire royalty term. Blink may terminate the Broad License Agreement for its convenience following written notice to the Broad. Either party may terminate the Broad License Agreement for a material breach of the other party, subject to a notice and cure period. The Broad may also terminate the Broad License Agreement in the event of Blink's bankruptcy or insolvency, if Blink fails to procure and maintain insurance or if Blink, its affiliates or

sublicensees bringing patent challenges relating to any licensed patents (subject to a cure period for Blink to terminate the sublicensee that has taken the applicable action).

License Agreement with Bio Palette Co., Ltd.

On March 27, 2019, we entered into a license agreement with Bio Palette Co., Ltd., or Bio Palette, pursuant to which we received an exclusive (even as to Bio Palette), sublicensable license under certain patent rights related to base editing owned or controlled by Bio Palette to exploit products for the treatment of human disease throughout the world, but excluding products in the microbiome field in Asia. We refer to this agreement as the Bio Palette License Agreement. In addition, we granted Bio Palette an exclusive (even as to Beam) license under certain patent rights related to base editing and gene editing owned or controlled by Beam to exploit products in the microbiome field in Asia. Each party to the agreement retains non-exclusive rights to develop and manufacture products in the microbiome field worldwide for the sole purpose of exploiting those products in its own territory. Each party agrees to certain coordination obligations in the microbiome field in the event that either party determines not to exploit their rights in such field.

If Bio Palette comes into the control of any other patent right that is useful within a certain defined field and intends to grant a license under that patent right in certain defined fields in certain defined territories, we have the exclusive right of first negotiation for an exclusive license under that patent right in those fields and territories. If we come into the control of any other patent right that is useful in certain defined fields and intend to grant a license under that patent right in those fields in certain defined territories, Bio Palette has the exclusive right of first negotiation for an exclusive license under that patent right in those fields and territories.

As part of the agreement, if we form a Scientific Advisory Board, then Bio Palette will have the right to appoint two representatives to such board for a period of five years. Additionally, we and Bio Palette agree to communicate with each other regarding potential base editing collaborations in Japan.

We are required to use commercially reasonable efforts to develop a licensed product in the United States, Japan, the United Kingdom, France, Germany, Italy and Spain. For any licensed product in our licensed field and territory that receives regulatory approval, we are required to use commercially reasonable efforts to commercialize that licensed product in the relevant country. Bio Palette is required to use commercially reasonable efforts to develop a licensed product in Japan. For any licensed product in the microbiome field in Asia that receives regulatory approval, Bio Palette is required to use commercially reasonable efforts to commercialize such licensed product in the relevant country.

Certain of the patents licensed to us under the Bio Palette License Agreement were licensed to Bio Palette from Kobe University under a license agreement we refer to as the Kobe Head License. Accordingly, the licenses granted to us under the Bio Palette License Agreement are subject to the terms and conditions set forth in the Kobe Head License, which include provisions providing for certain rights to be retained by third parties including governmental authorities.

We and Bio Palette are both permitted to sublicense the licensed patents to affiliates and third parties, provided that the applicable terms of the Bio Palette License Agreement and the applicable head licenses would apply to such affiliates and third parties. The sublicensing party is also responsible for any breaches of such terms by the applicable sublicensee and is responsible for all payments due under the Bio Palette License Agreement by operation of any such sublicense.

Upon the execution of the Bio Palette License Agreement, we paid Bio Palette an upfront fee of $500,000. If a certain Bio Palette patent issues in the United States, we will pay an additional amount in the low seven figures. In connection with the execution of the Bio Palette License Agreement, we issued to Bio Palette 75,000 shares

of our common stock, with an agreement to issue additional shares of our common stock in the low six figures in the event that the referenced Bio Palette patent issues in the United States. We also agreed to pay a royalty at a fraction of a percent on net sales of products that are covered by the patents licensed by Bio Palette to us, and Bio Palette agreed to pay a royalty at a fraction of a percent on net sales of products that are covered by the patents licensed by us to Bio Palette. The royalty term for a product in a country will terminate on the later of the expiration of (i) patent based exclusivity with respect to such licensed product in such country or (ii) regulatory exclusivity with respect to such licensed product in such country.

Any intellectual property arising out of activities under the Bio Palette License Agreement will be owned by the party inventing such intellectual property. Bio Palette is responsible for the prosecution and maintenance of all patents licensed by Bio Palette to us, provided that we have customary consultation, comment and review rights with respect to such prosecution and maintenance activities solely with respect to national entries of a certain specified PCT application. We are responsible for the prosecution and maintenance of patents licensed by us to Bio Palette.

Unless earlier terminated, the Bio Palette License Agreement will expire on a licensed product-by-licensed product and country-by-country basis upon the expiration of the applicable royalty term for each such licensed product and country. Each party has the right to terminate the Bio Palette License Agreement for convenience with respect to the license granted to such party subject to a specified notice period. Either party may terminate the Bio Palette License Agreement with respect to the license granted to the other party for a material breach by the other party, subject to a specified notice and cure period. Additionally, either party may also terminate the Bio Palette License Agreement in the event of the other party's bankruptcy or insolvency or if the other party, its affiliates or sublicensees brings a patent challenge relating to any licensed patents (but, in the case of such a patent challenge by a sublicensee, subject to a cure period for such party to terminate its agreement with the sublicensee that has taken the applicable action).

Manufacturing

We currently have no manufacturing capabilities. For our initial wave of clinical programs, we intend to use CMOs with relevant manufacturing experience in genetic medicines. We partnered with a CMO that has long-standing experience in manufacturing guide RNAs under GMP standards. We have also identified CMOs for manufacturing of all other components of our product candidates.

Government regulation

Government authorities in the United States, at the federal, state and local level, and in other countries and jurisdictions, including the European Union, extensively regulate, among other things, the research, development, testing, manufacturing, packaging, labeling, storage, record keeping, reimbursement, advertising, promotion, distribution, post-approval monitoring and reporting and import and export, pricing and reimbursement of pharmaceutical products, including biological products. Failure to comply with the applicable regulatory requirements at any time during the product development process or post-approval may subject an applicant for marketing approval to delays in development or approval, as well as administrative and judicial sanctions.

The processes for obtaining marketing approvals in the United States and in foreign countries and jurisdictions and compliance with applicable statutes and regulatory requirements, both pre- and post-approval, require the expenditure of substantial time and financial resources. The regulatory requirements applicable to drug and biological product development, approval, and marketing are subject to change, and regulations and administrative guidance often are revised or reinterpreted by the agencies in ways that may have a significant

impact on our business. Ethical, social and legal concerns about gene therapy, genetic testing and genetic research could result in additional regulations restricting or prohibiting the processes we may use. We cannot predict whether legislative changes will be enacted or if regulatory authorities' guidance or interpretations will change.

Licensure and regulation of biologics in the United States

In the United States, our candidate products are regulated as biological products, or biologics, under the Public Health Service Act, or the PHSA, and the Federal Food, Drug and Cosmetic Act, or the FDCA, the implementing regulations of the FDA and other federal, state and local statutes and regulations.

An applicant seeking approval to market and distribute a new biologic in the United States generally must satisfactorily complete each of the following steps:

- preclinical laboratory tests, animal studies and formulation studies all performed in accordance with the FDA's Good Laboratory Practice regulations;
- submission to the FDA of an IND application for human clinical testing, which must become effective before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, representing each clinical site before each clinical trial may be initiated;
- performance of adequate and well-controlled human clinical trials to establish the safety, potency, and purity of the product candidate for each proposed indication, in accordance with current Good Clinical Practices, or GCP;
- preparation and submission to the FDA of a Biologics License Application, or BLA, requesting marketing of the biological product for one or more proposed indications, including submission of detailed information on the manufacture and composition of the product and proposed labelling;
- review of the BLA by an FDA advisory committee, where applicable;
- satisfactory completion of one or more FDA inspections of the manufacturing facility or facilities, including those of third parties, at which the product, or components thereof, are produced to assess compliance with current Good Manufacturing Practices, or cGMP, requirements; to assure that the facilities, methods, and controls are adequate to preserve the product's identity, strength, quality, and purity; and, if applicable, the FDA's current good tissue practice, or cGTP, requirements for the use of human cellular and tissue products;
- satisfactory completion of any FDA audits of the non-clinical and clinical trial sites to assure compliance with GCPs and the integrity of clinical data in support of the BLA;
- payment of the application fee under the Prescription Drug User Free Act, or PDUFA, unless exempted; and
- FDA review and approval of the BLA, which may be subject to additional post-approval requirements, including the potential requirement to implement a Risk Evaluation and Mitigation Strategy, or REMS, and any post-approval studies required by the FDA.

Preclinical studies and investigational new drug application

Before testing any investigational biological product in humans, including a gene therapy product candidate, the product candidate must undergo preclinical testing. Preclinical tests include laboratory evaluations of product chemistry, formulation and stability, as well as studies to evaluate the potential for efficacy and toxicity

in animal studies. The conduct of the preclinical tests and formulation of the compounds for testing must comply with federal regulations and requirements, including applicable Good Laboratory Practices requirements. The results of the preclinical tests, together with manufacturing information and analytical data, are submitted to the FDA as part of an IND application.

An IND is an exemption from the FDCA that allows an unapproved drug or biological product to be shipped in interstate commerce for use in an investigational clinical trial. The IND seeks FDA authorization to test the drug or biological product candidate in humans and automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions about the product or conduct of the proposed clinical trial, including concerns that human research subjects will be exposed to unreasonable health risks. In that case, the IND sponsor and the FDA must resolve any outstanding FDA concerns before the clinical trials can begin. Preclinical or nonclinical testing typically continues even after the IND is submitted.

FDA may, at any time during the initial 30-day IND review period or while clinical trials are ongoing under the IND, impose a partial or complete clinical hold based on concerns for patient safety and/or noncompliance with regulatory requirements. This order issued by the FDA would delay a proposed clinical study or cause suspension of an ongoing study until all outstanding concerns have been adequately addressed, and the FDA has notified the company that investigations may proceed. Imposition of a clinical hold could cause significant delays or difficulties in completing planned clinical studies in a timely manner.

Expanded access to an investigational drug for treatment use

Expanded access, sometimes called “compassionate use,” is the use of investigational products outside of clinical trials to treat patients with serious or immediately life-threatening diseases or conditions when there are no comparable or satisfactory alternative treatment options. FDA regulations allow access to investigational products under an IND by the company or the treating physician for treatment purposes on a case-by-case basis for: individual patients (single-patient IND applications for treatment in emergency settings and non-emergency settings); intermediate-size patient populations; and larger populations for use of the investigational product under a treatment protocol or treatment IND application.

There is no requirement for a manufacturer to provide expanded access to an investigational product. However, if a manufacturer decides to make its investigational product available for expanded access, FDA reviews requests for expanded access and determines if treatment may proceed. Expanded access may be appropriate when all of the following criteria apply: patient(s) have a serious or immediately life-threatening disease or condition, and there is no comparable or satisfactory alternative therapy to diagnose, monitor, or treat the disease or condition; the potential patient benefit justifies the potential risks of the treatment and the potential risks are not unreasonable in the context or condition to be treated; and the expanded use of the investigational drug for the requested treatment will not interfere with initiation, conduct, or completion of clinical investigations that could support marketing approval of the product or otherwise compromise the potential development of the product.

Under the FDCA, sponsors of one or more investigational products for the treatment of a serious disease(s) or condition(s) must make publicly available their policy for evaluating and responding to requests for expanded access for individual patients. Sponsors are required to make such policies publicly available upon the earlier of initiation of a Phase 2 or Phase 3 study; or 15 days after the investigational drug or biologic receives designation as a breakthrough therapy, fast track product, or regenerative medicine advanced therapy.

In addition, on May 30, 2018, the Right to Try Act was signed into law. The law, among other things, provides an additional mechanism for patients with a life-threatening condition who have exhausted approved treatments and are unable to participate in clinical trials to access certain investigational products that have completed a

Phase I clinical trial, are the subject of an active IND, and are undergoing investigation for FDA approval. Unlike the expanded access framework described above, the Right to Try Pathway does not require FDA to review or approve requests for use of the investigational product. There is no obligation for a manufacturer to make its investigational products available to eligible patients under the Right to Try Act.

Human clinical trials in support of a BLA

Clinical trials involve the administration of the investigational product candidate to healthy volunteers or patients with the disease to be treated under the supervision of qualified principal investigators, generally physicians not employed by or under the trial sponsor's control, in accordance with GCP requirements, which include the requirement that all research subjects provide their informed consent for their participation. Clinical trials are conducted under study protocols detailing, among other things, the objectives of the study, inclusion and exclusion criteria, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND.

A sponsor who wishes to conduct a clinical trial outside the United States may, but need not, obtain FDA authorization to conduct the clinical trial under an IND. When a foreign clinical trial is conducted under an IND, all FDA IND requirements must be met unless waived. When a foreign clinical trial is not conducted under an IND, the sponsor must ensure that the trial complies with certain FDA regulatory requirements in order to use the trial as support for an IND or application for marketing approval in the U.S. Specifically, the FDA requires that such trials be conducted in accordance with GCP requirements intended to ensure the protection of human subjects and the quality and integrity of the study data, including requirements for review and approval by an independent ethics committee and obtaining subjects' informed consent.

For clinical trials conducted in the U.S., an IND is required, and each clinical trial must be reviewed and approved by an IRB either centrally or individually at each institution at which the clinical trial will be conducted. The IRB will consider, among other things, clinical trial design, patient informed consent, ethical factors, the safety of human subjects, and the possible liability of the institution. An IRB must operate in compliance with FDA regulations. Clinical trials must also comply with extensive GCP rules and the requirements for obtaining subjects' informed consent. The FDA, IRB, or the clinical trial sponsor may suspend or discontinue a clinical trial at any time for various reasons, including a finding that the clinical trial is not being conducted in accordance with FDA requirements, including GCP, or the subjects or patients are being exposed to an unacceptable health risk.

Additionally, some clinical trials are overseen by an independent group of qualified experts organized by the clinical trial sponsor, known as a data safety monitoring board or committee. This group may recommend continuation of the study as planned, changes in study conduct, or cessation of the study at designated checkpoints based on access to certain data from the study. Finally, research activities involving infectious agents, hazardous chemicals, recombinant DNA, and genetically altered organisms and agents may be subject to review and approval of an Institutional Biosafety Committee, or IBC, in accordance with NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules.

Clinical trials typically are conducted in three sequential phases, but the phases may overlap or be combined. Additional studies may be required after approval.

- *Phase 1* clinical trials are initially conducted in a limited population to test the product candidate for safety, including adverse effects, dose tolerance, absorption, metabolism, distribution, excretion, and pharmacodynamics in healthy humans or, on occasion, in the case of some products for severe or life-threatening diseases, especially when the product may be too inherently toxic to ethically administer to healthy volunteers, in patients, such as cancer patients.

- *Phase 2* clinical trials are generally conducted in a limited patient population to identify possible adverse effects and safety risks, evaluate the efficacy of the product candidate for specific targeted indications and determine dose tolerance and optimal dosage. Multiple Phase 2 clinical trials may be conducted by the sponsor to obtain information prior to beginning larger and more costly Phase 3 clinical trials.
- *Phase 3* clinical trials proceed if the Phase 2 clinical trials demonstrate that a dose range of the product candidate is potentially effective and has an acceptable safety profile. Clinical trials are undertaken within an expanded patient population at multiple geographically dispersed clinical study sites to further evaluate dosage, provide substantial evidence of clinical efficacy, and further test for safety. A well-controlled, statistically robust Phase 3 trial may be designed to deliver the data that regulatory authorities will use to decide whether or not to approve, and, if approved, how to appropriately label a biologic; such Phase 3 studies are referred to as "pivotal."

In some cases, the FDA may approve a BLA for a product candidate but require the sponsor to conduct additional clinical trials to further assess the product candidate's safety or effectiveness after approval. Such post-approval trials are typically referred to as Phase 4 clinical trials. These studies are used to gain additional experience from the treatment of patients in the intended therapeutic indication and to document a clinical benefit in the case of biologics approved under accelerated approval regulations. Failure to exhibit due diligence with regard to conducting Phase 4 clinical trials could result in withdrawal of approval for products. The FDA generally recommends that sponsors observe subjects for potential gene-therapy related delayed adverse events in a long-term follow-up study of fifteen years for integrating vectors, up to fifteen years for genome editing products, and up to five years for AAV vectors. FDA recommends that these long-term follow-up studies include, at a minimum, five years of annual physical examinations followed by annual queries, either in-person or by phone or written questionnaire, for the remaining observation period.

Under the Pediatric Research Equity Act of 2003, or PREA, a BLA or supplement thereto must contain data that are adequate to assess the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. Sponsors must submit a pediatric study plan to FDA outlining the proposed pediatric study or studies they plan to conduct, including study objectives and design, any deferral or waiver requests, and other information required by regulation. The FDA must then review the information submitted, consult with the sponsor, and agree upon a final plan. The FDA or the applicant may request an amendment to the plan at any time.

For products intended to treat a serious or life-threatening disease or condition, the FDA must, upon the request of an applicant, meet to discuss preparation of the initial pediatric study plan or to discuss deferral or waiver of pediatric assessments. In addition, FDA will meet early in the development process to discuss pediatric study plans with sponsors and FDA must meet with sponsors by no later than the end-of-phase 1 meeting for serious or life-threatening diseases and by no later than 90 days after FDA's receipt of the study plan. The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements, under specified circumstances. Unless otherwise required by regulation, the pediatric data requirements do not apply to products with orphan designation.

Information about certain clinical trials must be submitted within specific timeframes to the NIH for public dissemination on its ClinicalTrials.gov website. Similar requirements for posting clinical trial information in clinical trial registries exist in the European Union and in other countries outside the United States.

Special regulations and guidance governing gene therapy products

It is possible that the procedures and standards applied to gene therapy products and cell therapy products may be applied to any CRISPR/Cas9 product candidates we may develop, but that remains uncertain at this point. The FDA has defined a gene therapy product as one that mediates its effects by transcription and/or translation of transferred genetic material and/or by integrating into the host genome and which are administered as nucleic acids, viruses, or genetically engineered microorganisms. The products may be used to modify cells *in vivo* or transferred to cells *ex vivo* prior to administration to the recipient. The Center for Biologics Evaluation and Research, or CBER, at FDA regulates gene therapy products. Within CBER, the review of gene therapy and related products is consolidated in the Office of Tissues and Advanced Therapies, and the FDA has established the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER on its reviews. CBER works closely with the NIH, and the FDA and the NIH have published a number of guidance documents with respect to the development of gene therapy products.

Although the FDA's guidance documents are not legally binding, we believe that our compliance with certain aspects of them is likely necessary to gain approval for any product candidate we may develop. The guidance documents provide recommendations and additional clarity as to factors that the FDA will consider at each stage of gene therapy development and relate to, among other things, the proper preclinical assessment of gene therapies; the chemistry, manufacturing, and controls, or CMC, information that should be included in an IND application; the proper design of tests to measure product potency in support of an IND or BLA application; measures to observe delayed adverse effects in subjects who have been exposed to investigational gene therapies; and gene therapy products for the treatment of rare diseases.

If a gene therapy trial is conducted at, or sponsored by, institutions receiving any NIH funding for research involving recombinant or synthetic nucleic acid molecules, the trial must be conducted in accordance with the NIH Guidelines for Research Involving Recombinant DNA Molecules. Research conducted at such institutions that involves the transfer of recombinant or synthetic nucleic acid molecules, or DNA or RNA derived from recombinant or synthetic nucleic acid molecules, into human subjects must undergo review and approval by an IBC before it commences. Many companies and other institutions not otherwise subject to the NIH Guidelines voluntarily follow them.

Compliance with cGMP and cGTP requirements

Before approving a BLA, the FDA typically will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in full compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. The PHSA emphasizes the importance of manufacturing control for products like biologics whose attributes cannot be precisely defined. Material changes in manufacturing equipment, location, or process post-approval, may result in additional regulatory review and approval.

For a gene therapy product, the FDA also will not approve the product if the manufacturer is not in compliance with cGTP. These standards are found in FDA regulations and guidance documents that govern the methods used in, and the facilities and controls used for, the manufacture of human cells, tissues, and cellular and tissue based products, or HCT/Ps, which are human cells or tissue intended for implantation, transplant, infusion, or transfer into a human recipient. The primary intent of the GTP requirements is to ensure that cell and tissue based products are manufactured in a manner designed to prevent the introduction, transmission, and spread of communicable disease. FDA regulations also require tissue establishments to register and list their HCT/Ps with the FDA and, when applicable, to evaluate donors through screening and testing.

Manufacturers and others involved in the manufacture and distribution of products must also register their establishments with the FDA and certain state agencies. Both domestic and foreign manufacturing

establishments must register and provide additional information to the FDA upon their initial participation in the manufacturing process. Any product manufactured by or imported from a facility that has not registered, whether foreign or domestic, is deemed misbranded under the FDCA. The manufacturing facilities may be subject to periodic unannounced inspections by government authorities to ensure compliance with cGMPs and other laws. If a manufacturing facility is not in substantial compliance with the applicable regulations and requirements imposed when the product was approved, regulatory enforcement action may be taken, which may include a warning letter or an injunction against shipment of products from the facility and/or recall of products previously shipped.

Review and approval of a BLA

The results of product candidate development, preclinical testing, and clinical trials, along with descriptions of the manufacturing process, information on the chemistry and composition of the biological product candidate, proposed labeling, and other relevant information are submitted to the FDA as part of a BLA requesting license to market the product. Under federal law, the submission of most BLAs is subject to an application user fee, which for federal fiscal year 2019 is $2,588,478 for an application requiring clinical data. The sponsor of an approved BLA is also subject to an annual program fee, which for fiscal year 2019 is $309,915. Certain exceptions and waivers are available for some of these fees, such as an exception from the application fee for products with orphan designation and a waiver for certain small businesses.

The FDA has 60 days after submission of the application to conduct an initial review to determine whether it is sufficient to accept for filing based on the agency's threshold determination that it is sufficiently complete to permit substantive review. Once the submission has been accepted for filing, the FDA begins an in-depth review of the application. Under the goals and policies agreed to by the FDA under PDUFA, the FDA has ten months from filing in which to complete its initial review of a standard application and respond to the applicant, and six months for a priority review application. A major amendment to a BLA submitted at any time during the review cycle, including in response to a request from the FDA, may extend the goal date by three months. The FDA does not always meet its PDUFA goal dates for standard and priority BLAs.

During its review of a BLA, the FDA may refer the application to an advisory committee for review, evaluation, and recommendation as to whether the application should be approved and under what conditions. In particular, the FDA may refer applications for novel biological products or biological products that present difficult questions of safety or efficacy to an advisory committee. Typically, an advisory committee is a panel of independent experts, including clinicians and other scientific experts. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions about a BLA.

Under the PHSA, the FDA may approve a BLA if it determines that the product is safe, pure, and potent and that the facility where the product will be manufactured meets standards designed to ensure that it continues to be safe, pure, and potent.

On the basis of the FDA's evaluation of the application and accompanying information, including the results of the inspection of the manufacturing facilities and any FDA audits of non-clinical and clinical trial sites to assure compliance with GCP, the FDA may issue an approval letter or a complete response letter. An approval letter authorizes commercial marketing of the product with specific labeling for specific indications. If the application is not approved, the FDA will issue a complete response letter, which will contain the conditions that must be met in order to secure approval of the application, and when possible will outline recommended actions the sponsor might take to obtain approval of the application. Sponsors that receive a complete response letter may submit to the FDA information that represents a complete response to the issues identified by the FDA. Such resubmissions are classified under PDUFA as either Class 1 or Class 2. The classification of a resubmission is

based on the information submitted by an applicant in response to an action letter. Under the goals and policies agreed to by the FDA under PDUFA, the FDA has two months to review a Class 1 resubmission and six months to review a Class 2 resubmission. The FDA will not approve an application until issues identified in the complete response letter have been addressed.

If the FDA approves a new product, it may limit the approved indications for use of the product. It may also require that contraindications, warnings or precautions be included in the product labeling. In addition, the FDA may require post-approval studies, including Phase 4 clinical trials, to further assess the product's safety or efficacy after approval. The agency may also require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms, including REMS, to help ensure that the benefits of the product outweigh the potential risks. REMS can include medication guides, communication plans for healthcare professionals, and elements to assure safe use, or ETASU. ETASU can include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring, and the use of patent registries. The FDA may prevent or limit further marketing of a product based on the results of post-market studies or surveillance programs. After approval, many types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Fast track, breakthrough therapy, priority review and regenerative advanced therapy designations

The FDA has several programs designed to expedite the development and approval of drugs and biological products intended to treat serious or life-threatening diseases or conditions. These programs include fast track designation, breakthrough therapy designation, priority review designation, and regenerative medicine advanced therapy (RMAT) designation. These designations are not mutually exclusive, and a product candidate may qualify for one or more of these programs. While these programs are intended to expedite product development and approval, they do not alter the standards for FDA approval.

The FDA may grant a product fast track designation if it is intended for the treatment of a serious or life-threatening disease or condition, and nonclinical or clinical data demonstrate the potential to address an unmet medical need for such disease or condition. For fast track products, sponsors may have greater interactions with the FDA, and the FDA may initiate review of sections of a fast track product's application before the application is complete in some circumstances. Fast track designation may be rescinded if FDA believes that the product no longer meets the qualifying criteria.

A product may be designated as a breakthrough therapy if it is intended to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints. The FDA may take certain actions with respect to breakthrough therapies, including holding meetings with the sponsor throughout the development process; providing timely advice to the product sponsor regarding development and approval; involving more senior staff in the review process; assigning a cross-disciplinary project lead for the review team; and taking other steps to aid sponsors in designing the clinical trials in an efficient manner. Breakthrough designation may be rescinded if a product no longer meets the qualifying criteria.

With passage of the 21st Century Cures Act in December 2016, Congress authorized an additional expedited program for regenerative medicine advanced therapies. A product is eligible for RMAT designation if it is a regenerative medicine therapy that is intended to treat, modify, reverse or cure a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the product has the potential to address unmet medical needs for such disease or condition. The benefits of RMAT designation include the benefits available to breakthrough therapies, including potential eligibility for priority review and accelerated approval

based on surrogate or intermediate endpoints. RMAT designation may be rescinded if a product no longer meets the qualifying criteria.

FDA may designate a product for priority review if it is a product that treats a serious condition and, if approved, would provide a significant improvement in safety or effectiveness of the treatment, prevention, or diagnosis of such condition. A priority designation is intended to direct overall attention and resources to the evaluation of such applications, and it shortens the FDA's goal for taking action on a marketing application from ten months to six months from filing.

Accelerated approval pathway

The FDA may grant accelerated approval to a product for a serious or life-threatening condition that provides meaningful therapeutic advantage to patients over existing treatments based upon a determination that the product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit. The FDA may also grant accelerated approval for such a condition when the product has an effect on an intermediate clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality, or IMM, and that is reasonably likely to predict an effect on IMM or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments.

The accelerated approval pathway is most often used in settings in which the course of a disease is long and an extended period of time is required to measure the intended clinical benefit of a product, even if the effect on the surrogate or intermediate clinical endpoint occurs rapidly. Thus, accelerated approval has been used extensively in the development and approval of products for treatment of a variety of cancers in which the goal of therapy is generally to improve survival or decrease morbidity and the duration of the typical disease course requires lengthy and sometimes large trials to demonstrate a clinical or survival benefit.

For drugs granted accelerated approval, FDA generally requires sponsors to conduct, in a diligent manner, additional post-approval confirmatory studies to verify and describe the product's clinical benefit. Failure to conduct required post-approval studies with due diligence, failure to confirm a clinical benefit during the post-approval studies, or dissemination of false or misleading promotional materials would allow the FDA to withdraw the product approval on an expedited basis. All promotional materials for product candidates approved under accelerated approval are subject to prior review by the FDA unless FDA informs the applicant otherwise.

Post-approval regulation

Upon FDA approval of a BLA, the sponsor must comply with extensive post-approval regulatory requirements applicable to biological products, including any additional post-approval requirements that the FDA may impose as part of the approval process. These post-approval requirements include, among other things:

- record keeping requirements;
- reporting of certain adverse experiences with the product and production problems to the FDA;
- submission of updated safety and efficacy information to the FDA;
- drug sampling and distribution requirements;
- notifying FDA and gaining its approval of specified manufacturing and labeling changes; and
- compliance with requirements concerning advertising, promotional labeling, industry-sponsored scientific and educational activities and other promotional activities.

Additionally, the sponsor and its third-party manufacturers are subject to periodic unannounced regulatory inspections for compliance with ongoing regulatory requirements, including cGMP and pharmacovigilance regulations. Accordingly, the sponsor and its third-party manufacturers must continue to expend time, money, and effort in the areas of production and quality control to maintain compliance with cGMP regulations and other regulatory requirements.

The FDA strictly regulates the advertising and labeling of prescription drug products, including biological products. Promotional claims about a drug's safety or effectiveness are prohibited before the drug is approved. In addition, the sponsor of an approved drug in the United States may not promote that drug for unapproved, or off-label, uses, although a physician may prescribe a drug for an off-label use in accordance with the practice of medicine. If a company is found to have promoted off-label uses, it may become subject to administrative and judicial enforcement by the FDA, the DOJ, or the Office of the Inspector General of the Department of Health and Human Services, as well as state authorities. This could subject a company to a range of penalties that could have a significant commercial impact, including civil and criminal fines and agreements that materially restrict the manner in which a company promotes or distributes drug products. The federal government has levied large civil and criminal fines against companies for alleged improper promotion, and has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed.

After approval, some types of changes to the approved product, such as adding new indications or dosing regimens, manufacturing changes, or additional labeling claims, are subject to further FDA review and approval. In addition, the FDA may require testing and surveillance programs to monitor the effect of approved products that have been commercialized, and the FDA has the power to prevent or limit further marketing of a product based on the results of these post-marketing programs.

The FDA may withdraw product approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency or issues with manufacturing processes, may result in revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety signals; or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending applications or supplements to approved applications, or suspension or revocation of product license approvals;
- product recall, seizure, or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

Orphan drug designation

Orphan drug designation in the United States is designed to encourage sponsors to develop products intended for the treatment of rare diseases or conditions. In the United States, a rare disease or condition is statutorily defined as a condition that affects fewer than 200,000 individuals in the United States or that affects more than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and making the product available for the disease or condition will be recovered from sales of the product in the United States.

Orphan drug designation qualifies a company for certain tax credits. In addition, if a drug candidate that has orphan drug designation subsequently receives the first FDA approval for that drug for the disease for which it has such designation, the product is entitled to orphan drug exclusivity, which means that the FDA may not approve any other applications to market the same drug for the same indication for seven years following product approval unless the subsequent product candidate is demonstrated to be clinically superior. Absent a showing of clinical superiority, FDA cannot approve the same product made by another manufacturer for the same indication during the market exclusivity period unless it has the consent of the sponsor or the sponsor is unable to provide sufficient quantities.

A sponsor may request orphan drug designation of a previously unapproved product or new orphan indication for an already marketed product. In addition, a sponsor of a product that is otherwise the same product as an already approved orphan drug may seek and obtain orphan drug designation for the subsequent product for the same rare disease or condition if it can present a plausible hypothesis that its product may be clinically superior to the first drug. More than one sponsor may receive orphan drug designation for the same product for the same rare disease or condition, but each sponsor seeking orphan drug designation must file a complete request for designation. To qualify for orphan exclusivity, however, the drug must be clinically superior to the previously approved product that is the same drug for the same condition.

Pediatric exclusivity

Pediatric exclusivity is another type of non-patent regulatory exclusivity in the United States. Specifically, the Best Pharmaceuticals for Children Act provides for the attachment of an additional six months of exclusivity, which is added on to the term of any remaining regulatory exclusivity or patent periods at the time the pediatric exclusivity is granted. This six-month exclusivity may be granted if a BLA sponsor submits pediatric data that fairly respond to a written request from the FDA for such data, even if the data do not show the product to be effective in the pediatric population studied.

Biosimilars and exclusivity

The 2010 Patient Protection and Affordable Care Act, or PPACA, which was signed into law in March 2010, included a subtitle called the Biologics Price Competition and Innovation Act of 2009, or BPCIA. The BPCIA established a regulatory scheme authorizing the FDA to approve biosimilars and interchangeable biosimilars. FDA has approved over 20 biosimilar products for use in the United States to date. No interchangeable biosimilars, however, have been approved.

Under the BPCIA, a manufacturer may submit an application for licensure of a biological product that is “biosimilar to” or “interchangeable with” a previously approved biological product or “reference product.” In order for the FDA to approve a biosimilar product, it must find that there are no clinically meaningful differences between the reference product and proposed biosimilar product in terms of safety, purity, and potency. For the FDA to approve a biosimilar product as interchangeable with a reference product, the agency must find that the biosimilar product can be expected to produce the same clinical results as the reference product, and (for products administered multiple times) that the biologic and the reference biologic may be switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic.

Under the BPCIA, an application for a biosimilar product may not be submitted to the FDA until four years following the date of approval of the reference product. The FDA may not approve a biosimilar product until 12 years from the date on which the reference product was first licensed. This 12-year exclusivity period is referred to as the reference product exclusivity period and bars approval of a biosimilar but notably does not

prevent approval of a competing product pursuant to a full BLA (i.e., containing the sponsor's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity, and potency of the product). The BPCIA also created certain exclusivity periods for biosimilars approved as interchangeable products. The law also includes an extensive process for the innovator biologic and biosimilar manufacturer to litigate patent infringement, validity, and enforceability prior to the approval of the biosimilar.

There have been ongoing federal legislative and administrative efforts as well as judicial challenges seeking to repeal, modify or invalidate some or all of the provisions of the PPACA. While none of those efforts have focused on changes to the provisions of the ACA related to the biosimilar regulatory framework, if those efforts continue and if the ACA is repealed, substantially modified, or invalidated, it is unclear what, if any, impact such action would have on biosimilar regulation.

Patent term restoration and extension

A patent claiming a new biological product may be eligible for a limited patent term extension under the Hatch-Waxman Act, which permits a patent restoration of up to five years for a single patent for an approved product as compensation for patent term lost during product development and FDA regulatory review. The restoration period granted on a patent covering a product is typically one-half the time between the effective date a clinical investigation involving human beings is begun and the submission date of a marketing application less any dime during which the applicant failed to exercise due diligence, plus the time between the submission date of an application and the ultimate approval date less any dime during which the applicant failed to exercise due diligence. Patent term restoration cannot be used to extend the remaining term of a patent past a total of 14 years from the product's approval date. Only one patent applicable to an approved product is eligible for the extension, only those claims covering the approved drug, a method for using it, or a method for manufacturing it may be extended and the application for the extension must be submitted prior to the expiration of the patent in question. A patent that covers multiple products for which approval is sought can only be extended in connection with one of the approvals. The USPTO reviews and approves the application for any patent term extension or restoration in consultation with the FDA.

FDA approval of companion diagnostics

In August 2014, the FDA issued final guidance clarifying the requirements that will apply to approval of therapeutic products and *in vitro* companion diagnostics. According to the guidance, for novel drugs, a companion diagnostic device and its corresponding therapeutic should be approved or cleared contemporaneously by the FDA for the use indicated in the therapeutic product's labeling. Approval or clearance of the companion diagnostic device will ensure that the device has been adequately evaluated and has adequate performance characteristics in the intended population. In July 2016, the FDA issued a draft guidance intended to assist sponsors of the drug therapeutic and *in vitro* companion diagnostic device on issues related to co-development of the products.

Under the FDCA, *in vitro* diagnostics, including companion diagnostics, are regulated as medical devices. In the United States, the FDCA and its implementing regulations, and other federal and state statutes and regulations govern, among other things, medical device design and development, preclinical and clinical testing, premarket clearance or approval, registration and listing, manufacturing, labeling, storage, advertising and promotion, sales and distribution, export and import, and post-market surveillance. Unless an exemption applies, diagnostic tests require marketing clearance or approval from the FDA prior to commercial distribution.

The FDA previously has required *in vitro* companion diagnostics intended to select the patients who will respond to the product candidate to obtain pre-market approval, or PMA, simultaneously with approval of the

therapeutic product candidate. The PMA process, including the gathering of clinical and preclinical data and the submission to and review by the FDA, can take several years or longer. It involves a rigorous premarket review during which the applicant must prepare and provide the FDA with reasonable assurance of the device's safety and effectiveness and information about the device and its components regarding, among other things, device design, manufacturing and labeling. PMA applications are subject to an application fee, which exceeds $250,000 for most PMAs; for federal fiscal year 2019, the standard fee for review of a PMA is $322,147 and the small business fee is $80,537.

A clinical trial is typically required for a PMA application and, in a small percentage of cases, the FDA may require a clinical study in support of a 510(k) submission. A manufacturer that wishes to conduct a clinical study involving the device is subject to the FDA's IDE regulation. The IDE regulation distinguishes between significant and non-significant risk device studies and the procedures for obtaining approval to begin the study differ accordingly. Also, some types of studies are exempt from the IDE regulations. A significant risk device presents a potential for serious risk to the health, safety, or welfare of a subject. Significant risk devices are devices that are substantially important in diagnosing, curing, mitigating, or treating disease or in preventing impairment to human health. Studies of devices that pose a significant risk require both FDA and an IRB approval prior to initiation of a clinical study. Many companion diagnostics are considered significant risk devices due to their role in diagnosing a disease or condition. Non-significant risk devices are devices that do not pose a significant risk to the human subjects. A non-significant risk device study requires only IRB approval prior to initiation of a clinical study.

After a device is placed on the market, it remains subject to significant regulatory requirements. Medical devices may be marketed only for the uses and indications for which they are cleared or approved. Device manufacturers must also establish registration and device listings with the FDA. A medical device manufacturer's manufacturing processes and those of its suppliers are required to comply with the applicable portions of the Quality System Regulation, which covers the methods and documentation of the design, testing, production, processes, controls, quality assurance, labeling, packaging and shipping of medical devices. Domestic facility records and manufacturing processes are subject to periodic unscheduled inspections by the FDA. The FDA also may inspect foreign facilities that export products to the United States.

Regulation and procedures governing approval of medicinal products in the European Union

In order to market any product outside of the United States, a company must also comply with numerous and varying regulatory requirements of other countries and jurisdictions regarding quality, safety and efficacy and governing, among other things, clinical trials, marketing authorization, commercial sales and distribution of products. Whether or not it obtains FDA approval for a product, an applicant will need to obtain the necessary approvals by the comparable foreign regulatory authorities before it can commence clinical trials or marketing of the product in those countries or jurisdictions. Specifically, the process governing approval of medicinal products in the European Union generally follows the same lines as in the United States. It entails satisfactory completion of preclinical studies and adequate and well-controlled clinical trials to establish the safety and efficacy of the product for each proposed indication. It also requires the submission to the relevant competent authorities of a marketing authorization application, or MAA, and granting of a marketing authorization by these authorities before the product can be marketed and sold in the European Union.

Marketing authorization

To obtain a marketing authorization for a gene therapy product under the European Union regulatory system, an applicant must submit an application via the centralized procedure administered by the European Medicines Agency (EMA). Specifically, the grant of marketing authorization in the European Union for products containing

viable human tissues or cells such as gene therapy medicinal products is governed by Regulation 1394/2007/EC on advanced therapy medicinal products, read in combination with Directive 2001/83/EC of the European Parliament and of the Council, commonly known as the Community code on medicinal products. Regulation 1394/2007/EC lays down specific rules concerning the authorization, supervision, and pharmacovigilance of gene therapy medicinal products, somatic cell therapy medicinal products, and tissue engineered products. Manufacturers of advanced therapy medicinal products must demonstrate the quality, safety, and efficacy of their products to the EMA's Committee for Advance Therapies which provides a draft opinion regarding the application for marketing authorization and which is subject to final approval by the EMA's Committee for Medicinal Products for Human Use. The European Commission grants or refuses marketing authorization in light of that final approval.

Under the centralized procedure in the European Union, the maximum timeframe for the evaluation of an MAA is 210 days, excluding clock stops when additional information or written or oral explanation is to be provided by the applicant in response to questions of the CHMP. Accelerated evaluation may be granted by the CHMP in exceptional cases, when a medicinal product is of major interest from the point of view of public health and, in particular, from the viewpoint of therapeutic innovation. If the CHMP accepts such a request, the time limit of 210 days will be reduced to 150 days, but it is possible that the CHMP may revert to the standard time limit for the centralized procedure if it determines that it is no longer appropriate to conduct an accelerated assessment.

Regulatory data protection in the European Union

In the European Union, new chemical entities approved on the basis of a complete independent data package qualify for eight years of data exclusivity upon marketing authorization and an additional two years of market exclusivity pursuant to Regulation (EC) No 726/2004, as amended, and Directive 2001/83/EC, as amended. Data exclusivity prevents regulatory authorities in the European Union from referencing the innovator's data to assess a generic (abbreviated) application for a period of eight years. This also applies to biosimilars. During the additional two-year period of market exclusivity, a generic marketing authorization application can be submitted, and the innovator's data may be referenced, but no generic medicinal product can be marketed until the expiration of the market exclusivity. The overall ten-year period will be extended to a maximum of eleven years if, during the first eight years of those ten years, the marketing authorization holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to authorization, is held to bring a significant clinical benefit in comparison with existing therapies. In addition if a pediatric investigation plan is accepted, then a further year of market exclusivity might be obtained (or in the alternative a patent extension (SPC) of a further 6 months). For orphan medicinal products, the periods are separate and different in that there is a total of 10 year data exclusivity and if they have a PIP, there is a further two year extension to that 10 year period. Even if a compound is considered to be a new chemical or biological entity so that the innovator gains the prescribed period of data exclusivity, another company may market another version of the product if such company obtained marketing authorization based on an MAA with a complete independent data package of pharmaceutical tests, preclinical tests and clinical trials.

Periods of authorization and renewals

A marketing authorization is valid for five years, in principle, and it may be renewed after five years on the basis of a reevaluation of the risk-benefit balance by the EMA or by the competent authority of the authorizing member state. To that end, the marketing authorization holder must provide the EMA or the competent authority with a consolidated version of the file in respect of quality, safety and efficacy, including all variations introduced since the marketing authorization was granted, at least six months before the marketing authorization ceases to be valid. Once renewed, the marketing authorization is valid for an unlimited period,

unless the European Commission or the competent authority decides, on justified grounds relating to pharmacovigilance, to proceed with one additional five-year renewal period. Any authorization that is not followed by the placement of the drug on the EU market (in the case of the centralized procedure) or on the market of the authorizing member state within three years after authorization ceases to be valid.

Regulatory requirements after marketing authorization

Following approval, the holder of the marketing authorization is required to comply with a range of requirements applicable to the manufacturing, marketing, promotion and sale of the medicinal product. These include compliance with the European Union's stringent pharmacovigilance or safety reporting rules, pursuant to which post-authorization studies and additional monitoring obligations can be imposed. In addition, the manufacturing of authorized products, must also be conducted in strict compliance with the EMA's GMP requirements and comparable requirements of other regulatory bodies in the European Union, which mandate the methods, facilities, and controls used in manufacturing, processing and packing of drugs to assure their safety and identity. The marketing and promotion of authorized products, including industry-sponsored continuing medical education and advertising directed toward the prescribers of drugs and/or the general public, are strictly regulated in the European Union under Directive 2001/83EC, as amended.

Clinical trial approval

Pursuant to the currently applicable Clinical Trials Directive 2001/20/EC and the Directive 2005/28/EC on GCP, a system for the approval of clinical trials in the European Union has been implemented through national legislation of the member states. Under this system, an applicant must obtain approval from the competent national authority of each European Union member state in which the clinical trial is to be conducted. Furthermore, the applicant may only start a clinical trial at a specific study site after the local competent ethics committee has issued a favorable opinion. In April 2014, the European Union adopted a new Clinical Trials Regulation (EU) No 536/2014, which is set to replace the current Clinical Trials Directive 2001/20/EC six months after the clinical trial portal is announced by the European Commission to be ready for use. This new legislation, which will be directly applicable in all member states, aims at simplifying and streamlining the approval of clinical trials in the European Union by allowing for a streamlined application procedure via a single-entry point and strictly defined deadlines for the assessment of clinical trial applications.

Conditional marketing authorization

For medicinal products where the benefit of immediate availability outweighs the risk of less comprehensive data than normally required, based on the scope and criteria defined in legislation and guidelines, it is possible to obtain from the EMA a conditional marketing authorization with a 12 month validity period and annual renewal pursuant to Regulation No 507/2006. These are granted only if the CHMP finds that all four requirements are met: (i) the benefit-risk balance of the product is positive; (ii) it is likely that the applicant will be able to provide comprehensive data; (iii) unmet medical needs will be fulfilled; and (iv) the benefit to public health of the medicinal product's immediate availability on the market outweighs the risks due to need for further data.

PRIME designation in the EU

The EU has a Priority Medicines, or PRIME, scheme is intended to encourage drug development in areas of unmet medical need and provides accelerated assessment of products representing substantial innovation reviewed under the centralized procedure. Products from small- and medium-sized enterprises may qualify for earlier entry into the PRIME scheme than larger companies. Many benefits accrue to sponsors of product

candidates with PRIME designation, including but not limited to, early and proactive regulatory dialogue with the EMA, frequent discussions on clinical trial designs and other development program elements, and accelerated marketing authorization application assessment once a dossier has been submitted.

Orphan drug designation and exclusivity

Regulation (EC) No 141/2000 and Regulation (EC) No. 847/2000 provide that a product can be designated as an orphan drug by the European Commission if its sponsor can establish: that the product is intended for the diagnosis, prevention or treatment of (1) a life-threatening or chronically debilitating condition affecting not more than five in ten thousand persons in the European Union when the application is made, or (2) a life-threatening, seriously debilitating or serious and chronic condition in the European Union and that without incentives it is unlikely that the marketing of the drug in the European Union would generate sufficient return to justify the necessary investment. For either of these conditions, the applicant must demonstrate that there exists no satisfactory method of diagnosis, prevention, or treatment of the condition in question that has been authorized in the European Union or, if such method exists, the drug will be of significant benefit to those affected by that condition.

Brexit and the regulatory framework in the United Kingdom (U.K.)

On June 23, 2016, the electorate in the U.K. voted in favor of leaving the European Union (commonly referred to as “Brexit”). Thereafter, on March 29, 2017, the country formally notified the European Union of its intention to withdraw pursuant to Article 50 of the Lisbon Treaty. The withdrawal of the United Kingdom from the European Union was due to occur on 29 March 2019, but this has now been extended to 31 October 2019. It is possible that there will be a further extension. If the Withdrawal Agreement as currently drafted is ratified by the U.K. parliament, there will be a period of 2 years during which the regulatory regime will remain essentially the same across the U.K. and the EU. If the U.K. exits the EU without an agreement (a so called “hard Brexit”) then the U.K. will be completely separated from a regulatory perspective from the EU immediately upon the exit date.

Since the regulatory framework for pharmaceutical products in the U.K. relating to quality, safety and efficacy of pharmaceutical products, clinical trials, marketing authorization, commercial sales and distribution of pharmaceutical products is derived from European Union directives and regulations, Brexit will materially impact the future regulatory regime which applies to products and the approval of product candidates in the United Kingdom. In the first instance, a separate U.K. authorization from any centralized authorization for the EU would need to be applied for. In the immediately foreseeable future, the process is likely to remain very similar to that applicable in the EU, albeit that the processes for applications will be separate. Longer term, the U.K. is likely to develop its own legislation that diverges from that in the EU.

General data protection regulation

The collection, use, disclosure, transfer, or other processing of personal data, including personal health data, regarding individuals who are located in the European Economic Area (EEA), and the processing of personal data that takes place in the EEA, is subject to the European Union’s General Data Protection Regulation, or GDPR, which became effective on May 25, 2018. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, and it imposes heightened requirements on companies that process health and other sensitive data, such as requiring in many situations that a company obtain the consent of the individuals to whom the sensitive personal data relate before processing such data. Examples of obligations imposed by the GDPR on companies processing personal data that fall within the scope of the GDPR include providing information to individuals regarding data processing activities, implementing safeguards to

protect the security and confidentiality of personal data, appointing a data protection officer, providing notification of data breaches, and taking certain measures when engaging third-party processors. The GDPR also imposes strict rules on the transfer of personal data to countries outside the EEA, including the U.S., and permits data protection authorities to impose large penalties for violations of the GDPR, including potential fines of up to €20 million or 4% of annual global revenues, whichever is greater. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. Compliance with the GDPR is a rigorous and time-intensive process that may increase the cost of doing business or require companies to change their business practices to ensure full compliance.

Coverage, pricing, and reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we may seek regulatory approval by the FDA or other government authorities. In the United States and markets in other countries, patients who are prescribed treatments for their conditions and providers performing the prescribed services generally rely on third-party payors to reimburse all or part of the associated healthcare costs. Patients are unlikely to use any product candidates we may develop unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of such product candidates. Sales of our products will depend, in part, on the availability of coverage and the adequacy of reimbursement from third-party payors.

Within the United States, third-party payors include government authorities or government healthcare programs, such as Medicare and Medicaid, and private entities, such as managed care organizations, private health insurers and other organizations. The process for determining whether a third-party payor will provide coverage for a product may be separate from the process for setting the reimbursement rate that the payor will pay for the drug product. Third-party payors may limit coverage to specific products on an approved list, or formulary, which might not include all of the FDA-approved products for a particular indication. Some third-party payors may manage utilization of a particular product by requiring pre-approval (known as “prior authorization”) for coverage of particular prescriptions (to allow the payor to assess medical necessity). Moreover, a third-party payor’s decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Adequate third-party reimbursement may not be available to enable us to maintain net price levels sufficient to realize an appropriate return on our investment in product development. Additionally, coverage and reimbursement for drug products can differ significantly from payor to payor. One third-party payor’s decision to cover a particular drug product or service does not ensure that other payors will also provide coverage for the drug product, or will provide coverage at an adequate reimbursement rate.

Third-party payors are increasingly challenging the price and examining the cost-effectiveness of new products and services in addition to their safety and efficacy. To obtain or maintain coverage and reimbursement for any current or future product, we may need to conduct expensive pharmacoeconomic studies to demonstrate the medical necessity and cost-effectiveness of our product. These studies will be in addition to the studies required to obtain regulatory approvals. If third-party payors do not consider a product to be cost-effective compared to other available therapies, they may not cover the product after approval as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow a company to sell its products at a profit. Thus, obtaining and maintaining reimbursement status is time-consuming and costly.

As noted above, the marketability of any product candidates for which we receive regulatory approval for commercial sale may suffer if the government and third-party payors fail to provide coverage and adequate reimbursement. There is an emphasis on cost containment measures in the United States and we expect will

continue to increase the pressure on pharmaceutical pricing. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more product candidates for which we receive regulatory approval from one or more third party payors, less favorable coverage policies and reimbursement rates may be implemented in the future.

If we obtain appropriate approval in the future to market any of our current product candidates in the United States, we may be required to provide discounts or rebates under government healthcare programs or to certain government and private purchasers in order to obtain coverage under federal healthcare programs such as Medicaid. Participation in such programs may require us to track and report certain drug prices. We may be subject to fines and other penalties if we fail to report such prices accurately.

Outside the United States, ensuring adequate coverage and payment for any product candidates we may develop will face challenges. Pricing of prescription pharmaceuticals is subject to governmental control in many countries. Pricing negotiations with governmental authorities can extend well beyond the receipt of regulatory marketing approval for a product and may require us to conduct a clinical trial that compares the cost effectiveness of any product candidates we may develop to other available therapies. The conduct of such a clinical trial could be expensive and result in delays in our commercialization efforts.

In the European Union, pricing and reimbursement schemes vary widely from country to country because this is not yet the subject of harmonized EU law. Many countries provide that products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional studies that compare the cost-effectiveness of a particular product candidate to currently available therapies (so called health technology assessments) in order to obtain reimbursement or pricing approval and others with “peg” their pricing to a basket of other countries. European Union member states may approve a specific price for a product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the product on the market. Some member states, in addition to controlling pricing will monitor and control prescription volumes and issue guidance to physicians to limit prescriptions. Recently, many countries in the European Union have increased the amount of discounts required on pharmaceuticals and these efforts could continue as countries attempt to manage healthcare expenditures, especially in light of the severe fiscal and debt crises experienced by many countries in the European Union. The downward pressure on health care costs in general, particularly prescription products, has become intense. As a result, increasingly high barriers are being erected to the entry of new products. Political, economic, and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various European Union member states, and parallel trade (arbitrage between low-priced and high-priced member states), can further reduce prices. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products, if approved in those countries.

Healthcare law and regulation

Healthcare providers and third-party payors play a primary role in the recommendation and prescription of pharmaceutical products that are granted marketing approval. Arrangements with providers, consultants, third-party payors, and customers are subject to broadly applicable fraud and abuse, anti-kickback, false claims laws, reporting of payments to physicians and teaching physicians and patient privacy laws and regulations and other healthcare laws and regulations that may constrain our business and/or financial arrangements. Restrictions under applicable federal and state healthcare laws and regulations, include the following:

- federal false claims, false statements and civil monetary penalties laws prohibiting, among other things, any person from knowingly presenting, or causing to be presented, a false claim for payment of government funds or knowingly making, or causing to be made, a false statement to get a false claim paid;

- federal healthcare program anti-kickback law, which prohibits, among other things, persons from soliciting, receiving or providing remuneration, directly or indirectly, to induce either the referral of an individual, for an item or service or the purchasing or ordering of a good or service, for which payment may be made under federal healthcare programs such as Medicare and Medicaid;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which, in addition to privacy protections applicable to healthcare providers and other entities, prohibits executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;
- the federal Food, Drug, and Cosmetic Act, or the FDCA, which among other things, strictly regulates drug marketing, prohibits manufacturers from marketing such products for off-label use and regulates the distribution of samples;
- federal laws that require pharmaceutical manufacturers to report certain calculated product prices to the government or provide certain discounts or rebates to government authorities or private entities, often as a condition of reimbursement under government healthcare programs;
- the so-called “federal sunshine” law under the Patient Protection and Affordable Care Act, which requires pharmaceutical and medical device companies to monitor and report certain financial interactions with certain healthcare providers to the Center for Medicare & Medicaid Services within the U.S. Department of Health and Human Services for re-disclosure to the public related to payments or transfer of value made to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members; and
- analogous state and foreign laws and regulations, such as state anti-bribery, anti-kickback and false claims laws, which may apply to healthcare items or services that are reimbursed by non-governmental third-party payors, including private insurers.

Some state laws require pharmaceutical companies to comply with specific compliance standards, restrict financial interactions between pharmaceutical companies and healthcare providers or require pharmaceutical companies to report information related to payments to health care providers or marketing expenditures.

Health care and other reform

In the United States, there have been and continue to be a number of significant legislative initiatives to contain healthcare costs. Federal and state governments continue to propose and pass legislation designed to reform delivery of, or payment for, health care, which include initiatives to reduce the cost of healthcare. For example, in March 2010, the United States Congress enacted the Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act, or the Healthcare Reform Act, which expanded health care coverage through Medicaid expansion and the implementation of the individual mandate for health insurance coverage and which included changes to the coverage and reimbursement of drug products under government healthcare programs. Under the Trump administration, there have been ongoing efforts to modify or repeal all or certain provisions of the Healthcare Reform Act. For example, tax reform legislation was enacted at the end of 2017 that eliminates the tax penalty established under Healthcare Reform Act for individuals who do not maintain mandated health insurance coverage beginning in 2019. The Healthcare Reform Act has also been subject to judicial challenge. In December 2018, a federal district court, in a challenge brought by a number of state attorneys general, found the Healthcare Reform Act unconstitutional in its entirety because, once Congress repealed the individual mandate provision, there was no longer a basis to rely on Congressional taxing authority to support enactment of the law. Pending appeals, which could take some time, the Healthcare Reform Act is still operational in all respects.

There have also been other reform initiatives under the Trump Administration, including initiatives focused on drug pricing. For example, the Bipartisan Budget Act of 2018 contained various provisions that affect coverage and reimbursement of drugs, including an increase in the discount that manufacturers of Medicare Part D brand name drugs must provide to Medicare Part D beneficiaries during the coverage gap from 50% to 70% that took effect in 2019. As another example, in May of 2018, President Trump and the Secretary of the Department of Health and Human Services, or HHS, released a “blueprint” to lower prescription drug prices and out-of-pocket costs. Certain proposals in the blueprint, and related drug pricing measures proposed since the blueprint, could cause significant operational and reimbursement changes for the pharmaceutical industry. As another example, in November of 2018, CMS issued an advance notice of proposed rulemaking that proposed revisions to Medicare Part D to support health plans’ negotiation of lower drug prices with manufacturers and reduce health plan members’ out-of-pocket costs.

There have also been efforts by federal and state government officials or legislators to implement measures to regulate prices or payment for pharmaceutical products, including legislation on drug importation. Recently, there has been considerable public and government scrutiny of pharmaceutical pricing and proposals to address the perceived high cost of pharmaceuticals. There have also been recent state legislative efforts to address drug costs, which generally have focused on increasing transparency around drug costs or limiting drug prices.

General legislative cost control measures may also affect reimbursement for our product candidates. The Budget Control Act, as amended, resulted in the imposition of 2% reductions in Medicare (but not Medicaid) payments to providers in 2013 and will remain in effect through 2027 unless additional Congressional action is taken. Any significant spending reductions affecting Medicare, Medicaid or other publicly funded or subsidized health programs that may be implemented and/or any significant taxes or fees that may be imposed on us could have an adverse impact on our results of operations.

Adoption of new legislation at the federal or state level could affect demand for, or pricing of, our current or future products if approved for sale. We cannot, however, predict the ultimate content, timing or effect of any changes to the Healthcare Reform Act or other federal and state reform efforts. There is no assurance that federal or state health care reform will not adversely affect our future business and financial results.

Facilities

We occupy approximately 38,203 square feet of office and laboratory space in Cambridge, Massachusetts under a lease that expires in October 2028. We have entered into a lease agreement with the Massachusetts Institute of Technology for approximately 123,209 square feet of office and laboratory space, which is currently under construction. We currently anticipate commencing this lease in the second half of 2021 upon completion of construction. Upon completion of construction and our commencement of our occupancy within the space, the lease will expire on the twelfth anniversary of commencement. We believe that our facilities are sufficient to meet our current needs and that suitable additional space will be available as and when needed.

Employees

As of June 30, 2019, we had 87 full-time employees. Of these full-time employees, 70 are engaged in research and development activities. None of our employees is represented by a labor union or covered by a collective bargaining agreement or represented by a trade or labor union.

Legal proceedings

We are not currently a party to any material legal proceedings. From time to time, we may be subject to various legal proceedings and claims that arise in the ordinary course of our business activities. Regardless of the outcome, litigation can have a material adverse effect on us because of defense and settlement costs, diversion of management resources, and other factors.

Management

Executive officers and directors

Our executive officers and directors, and their ages and positions as of June 30, 2019, are as set forth below:

Name	Age	Position(s)
Executive Officers		
John Evans	42	Chief Executive Officer, Director
Giuseppe Ciaramella, Ph.D.	51	Chief Scientific Officer
Courtney Wallace	35	Senior Vice President, Head of Business Development and Strategy
Christine Bellon, Ph.D., J.D.	54	Senior Vice President, Chief Legal Officer and Secretary
Suzanne Fleming	57	Senior Vice President, Finance and Treasurer
Susan O'Connor	55	Chief Human Resources Officer
Non-Management Directors		
Kristina Burow	45	Director
Mark Fishman, M.D.	68	Director
Carole Ho, M.D.	46	Director
Stephen Knight, M.D.	59	Director
Robert Nelsen	55	Director
Other Key Employees		
Francine Gregoire, Ph.D.	58	Vice President for Liver Diseases
Dana Lavasseur, Ph.D.	47	Vice President, Hematology
Manmohan Singh, Ph.D.	54	Vice President of Pharmaceutical Sciences and Delivery Technology

Executive officers

John Evans has served as our President and Chief Executive Officer since 2017. Mr. Evans has also served as a Venture Partner with ARCH Venture Partners since 2017 and as a Director of Verve Therapeutics since August 2018. Mr. Evans was previously at Agios Pharmaceuticals, from September 2009 until April 2017, most recently serving as Senior Vice President for Corporate Development and Portfolio Leadership. At Agios, Mr. Evans served as IDH Portfolio Executive, providing strategic and operational leadership for a portfolio of first-in-class IDH inhibitors including IDHIFA and TIBSOVO. He also helped initiate and lead Agios' alliance with Celgene Corporation. Prior to joining Agios, Mr. Evans worked at Infinity Pharmaceuticals, McKinsey & Company's pharmaceuticals practice and MedImmune. Mr. Evans holds an M.B.A. in Healthcare Management from Wharton, a Masters in Biotechnology from the University of Pennsylvania, and a B.A. in English with distinction from Yale University. We believe that Mr. Evans is qualified to serve on our Board of Directors based on his extensive experience in the pharmaceutical industry and his expansive knowledge of our company based on his role as President and Chief Executive Officer.

Giuseppe Ciaramella, Ph.D., has served as our Chief Scientific Officer since February 2018. Dr. Ciaramella has 25 years of drug discovery experience across different therapeutic modalities, from small molecule, to biologies, to advanced medicinal products, such as mRNA. Prior to joining Beam, Dr. Ciaramella was the Chief Scientific Officer of the Infectious Diseases division of Moderna Therapeutics from 2014 until February 2018, where he was instrumental in generating some of the first LNP-encapsulated, mRNA vaccines to be dosed in humans, several of which are progressing through clinical studies. From 2011 until 2014, Dr. Ciaramella served as Executive Director at Astrazeneca, where he led their small molecule antiviral strategy. Between 2010 and 2011 he served as Vice President and Head of Collaborative Research at Boehringer Ingelheim, where he had

responsibility for external research. Prior to Boehringer Ingelheim, he spent 14 years at Pfizer in the U.K. where he held several leadership positions, including head of Biotherapeutics, head of Antivirals and head of the Hit Discovery Group. Dr. Ciaramella is a member of the Infectious Diseases Society of America and of the American Society of Gene Therapy. Dr. Ciaramella holds a Ph.D. in Biochemistry from University College London.

Courtney Wallace has served as our Senior Vice President, Head of Business Development and Strategy since February 2019 and previously served as our Vice President, Head of Business Development and Strategy beginning in May 2018. Prior to joining Beam, Ms. Wallace was at Celgene Corporation from August 2013 through April 2018, most recently serving as Senior Director of Business Development, where she was responsible for leading collaborations, licensing transactions, equity investments, and mergers and acquisitions across a variety of therapeutic areas. Prior to joining Celgene, Ms. Wallace was a consultant with Easton Associates (now part of Navigant Consulting), a boutique healthcare management consultancy. Ms. Wallace holds an A.B. from Harvard College and an MBA from Harvard Business School.

Christine Bellon, Ph.D., J.D., has served as our Senior Vice President and Chief Legal Officer since 2019. Prior to joining Beam, she served as Senior Vice President, General Counsel and Corporate Secretary for Forma Therapeutics from October 2017 until April 2019. Prior to Forma, Dr. Bellon was Senior Vice President of Legal Affairs for Relay Therapeutics from July 2016 until October 2017. Prior to Relay, she served as Vice President of Legal Affairs and Corporate Secretary at Blueprint Medicines. Earlier in her career, Dr. Bellon practiced law and served in legal leadership roles at Hydra Biosciences and Infinity Pharmaceuticals. Dr. Bellon holds a B.S. in chemistry from Yale University; a Ph.D. in organic chemistry from the Massachusetts Institute of Technology, where she did research in the laboratory of K. Barry Sharpless; and a J.D. from Columbia Law School. Dr. Bellon is a trustee of the Boston Museum of Science.

Suzanne Fleming has served as our Senior Vice President, Finance since February 2019. Prior to joining Beam, Ms. Fleming served most recently as Senior Vice President, Finance and Treasurer at Epizyme, Inc. from September 2017 until January 2019. Before Epizyme, Ms. Fleming was Vice President, Finance at Foundation Medicine from October 2014 until September 2017. Ms. Fleming also held senior finance positions at Aegerion Pharmaceuticals, AVEO Pharmaceuticals, Transform Pharmaceuticals and Transkaryotic Therapies. Ms. Fleming holds a B.S. degree in Accounting from Stonehill College and earned her CPA in Massachusetts.

Susan O'Connor has served as our Chief Human Resources Officer since February 2019. Prior to joining Beam as a full time employee, Ms. O'Connor was the Interim Chief Human Resources Officer for Beam from August 2017 through April 2019. Ms. O'Connor launched O'Connor & Associates, a strategic human resources consulting firm in 2008 and has served as Interim Chief Human Resources Officer for a number of biotechnology companies since that time, including Blueprint Medicines, Voyager Therapeutics, Fulcrum Therapeutics, Relay Therapeutics, Magenta Therapeutics, and Celsius Therapeutics. Prior to launching O'Connor & Associates, Ms. O'Connor was Vice President, Human Resources at Johnson & Johnson, where she also served as a board member for several operating companies within the medical devices sector of the company. Ms. O'Connor holds a bachelor's degree from Providence College.

Non-employee directors

Kristina Burow has served on our Board of Directors since 2017. Ms. Burow is a Managing Director with ARCH Venture Partners. Ms. Burow is focused on the creation and development of biotechnology, pharmaceutical and biotechnology companies. Since joining ARCH in 2002 Ms. Burow has played a significant role in the creation and development of a number of companies. Ms. Burow is also a Director of Vividion Therapeutics, Gossamer Bio, Lycera, BlackThorn Therapeutics, Sienna Biopharmaceuticals, Metacrine, Scholar Rock, Unity Biotechnology, Pretzel Therapeutics, Llama Therapeutics, AgBiome, AgTech Accelerator and Vir Biotechnology. She previously was a co-founder and Director of Receptos. Ms. Burow has participated in a number of other

ARCH portfolio companies including Siluria Technologies, Kythera Biopharmaceuticals, Ikaria and was a co-founder and board member of Sapphire Energy. Prior to joining ARCH Ms. Burow was an Associate with the Novartis BioVenture Fund in San Diego. Ms. Burow holds an M.B.A. from the University of Chicago, an M.A. in Chemistry from Columbia University and a B.S. in Chemistry from the University of California, Berkeley. We believe Ms. Burow's investment and leadership experience makes her qualified to serve on our Board of Directors.

Mark C. Fishman, M.D., has served on our Board of Directors since 2018. Dr. Fishman is a Professor in the Harvard Department of Stem Cell and Regenerative Biology and Chief of the Pathways Clinical Service at Massachusetts General Hospital. In February 2019, he became a Co-Founding Partner of Aditum Bio Fund and Chairman of its Scientific and Medical Advisory Board. From 2002 through 2016, Dr. Fishman was the founding President of the Novartis Institutes for BioMedical Research (NIBR), a member of the Executive Committee of Novartis, AG, and served on the Board of Directors of Novartis International Pharmaceutical LTD and Chaired the Board of Directors of the Genomics Institute of the Novartis Research Foundation. Prior to his time at NIBR, he was the Founding Director of the Cardiovascular Research Center and Chief of Cardiology at Massachusetts General Hospital. Dr. Fishman also has served as the Chairman of the Board of privately held Semma Therapeutics since 2016. He also serves as a consultant to and Scientific Advisory Board member of several other privately held biotechnology companies. Dr. Fishman graduated from Yale College and Harvard Medical School and trained in medicine and cardiology at Massachusetts General Hospital. We believe that Dr. Fishman's experience studying genetics and regenerative medicine makes him qualified to serve on our Board of Directors.

Carole Ho, M.D. has served on our Board of Directors since 2018. Dr. Ho has served as the Chief Medical Officer and Head of Development of Denali Therapeutics since June 2015. Prior to joining Denali, Dr. Ho held various roles of increasing responsibility between at Genentech between 2007 and 2015 most recently as Vice President, Non-Oncology Early Clinical Development. From November 2006 to October 2007, Dr. Ho served as Associate Medical Director at Johnson & Johnson. From June 2002 to November 2006, she was an instructor in the Department of Neurology and Neurological Sciences at Stanford University. Dr. Ho received her M.D. from Cornell University and her B.S. in Biochemical Sciences from Harvard College. We believe that Dr. Ho's experience studying neurology and her experience in senior leadership at a public company makes her qualified to serve on our Board of Directors.

Stephen Knight, M.D. has served on our Board of Directors since 2017. Dr. Knight joined F-Prime Capital, where he served as President and Managing Partner, in 2003. He has worked in the pharmaceutical and biotechnology industries for over 25 years and invests broadly across healthcare. Steve serves on the Board of Directors of Innovent Biologics, Iora Health, Pulmocide, and Semma Therapeutics. Steve previously served on the boards of several private and public health care companies including Blueprint Medicines, Denali Therapeutics, FoldRx Pharmaceuticals, Ironwood Pharmaceuticals, NextWave Pharmaceuticals, Proteostasis Therapeutics, and Respivert, Ltd. Prior to joining F-Prime Capital, Steve held various senior management roles in private and public biotechnology and consulting companies. He was also a researcher at AT&T Bell Laboratories, the National Institutes of Health, and Yale University. He holds an M.D. from the Yale University School of Medicine, an M.B.A. from the Yale School of Organization and Management, and received a B.S. in biology from Columbia University, where he graduated summa cum laude and Phi Beta Kappa. We believe that Dr. Knight's experience in the medical industry makes him qualified to serve on our Board of Directors.

Robert Nelsen has served as a member of our board of directors since 2017. Mr. Nelsen co-founded ARCH Venture Partners in 1986 and currently serves as a Managing Director. Mr. Nelsen currently serves on boards of directors of Denali Therapeutics, Inc., Unity Biotechnology, Inc. and on the boards of a number of private companies. Mr. Nelsen served on the boards of Agios Pharmaceuticals Inc. from 2007 to 2017, Fate Therapeutics, Inc. from 2007 to 2014, Syros Pharmaceuticals, Inc. from 2012 to 2018, Sage Therapeutics, Inc.

from 2013 to 2016, Juno Therapeutics, Inc. from 2013 to 2018, when it was acquired by Celgene Corporation, Bellerophon Therapeutics, Inc. from 2014 to 2015, Sienna Biopharmaceuticals, Inc. from 2015 to 2018 and Gossamer Bio, Inc. from 2017 to 2018, prior to its initial public offering. He previously served as a Trustee of the Fred Hutchinson Cancer Research Institute, the Institute for Systems Biology, and was a director of the National Venture Capital Association. Mr. Nelsen holds an M.B.A. from the University of Chicago and a B.S. from the University of Puget Sound with majors in Economics and Biology. We believe that Mr. Nelsen's venture capital experience in the biotechnology industry makes him qualified to serve on our Board of Directors.

Other key employees

Francine Gregoire, Ph.D., has served as our Vice President for Liver Diseases since April 2018. Dr. Gregoire has over 20 years of drug discovery experience, covering roles from the early phases of drug discovery to the identification of small molecules, RNA therapeutics, and gene editing clinical candidates. Prior to joining Beam Therapeutics, Dr. Gregoire led the Liver Therapeutics group at CRISPR Therapeutics, with a focus on non-viral delivery for *in vivo* gene editing, from March 2016 until April 2018. Prior to CRISPR, Dr. Gregoire was Head of Cardiovascular and Interim Head of Rare Diseases at Moderna from November 2013 until March 2016, where she led preclinical scientific teams to discover, validate and nominate RNA therapeutics for clinical development in Cardiovascular and Liver Rare Disease indications. Dr. Gregoire holds a Ph.D. in Cell Biology from the Catholic University of Leuven.

Dana Levasseur, Ph.D., has served as our Vice President for Hematology since July 2018. He has more than 20 years of experience developing genetic delivery systems and therapies, spanning roles through early discovery to clinical entry. Prior to joining Beam Therapeutics, Dr. Levasseur served as Director at Bioverativ from early 2017 until June 2018, where he was responsible for advancing gene edited therapies through FDA investigational new drug approval. Dr. Levasseur was at Novartis Institutes for Bio-medical Research from early 2015 until 2017 where he led a preclinical team responsible for integrated lead discovery of small molecules for neurologic, cardio-metabolic and liver disease programs, and for expanding more clinically relevant cell modeling and screening approaches across Novartis disease programs. Before joining Novartis, Dr. Levasseur ran a research program centered on hematopoietic and pluripotent stem cell gene delivery and regulation at the University of Iowa, where he was a March of Dimes Basil O'Connor Scholar. Dr. Levasseur received a Ph.D. in Molecular Genetics and Biochemistry from the University of Alabama, followed by postdoctoral studies at Harvard Medical School.

Manmohan Singh, Ph.D., has served as our Vice President for Pharmaceutical Sciences and Delivery Technologies since July 2018. Prior to joining Beam Therapeutics, Dr. Singh was the Global Head Drug Product Development Vaccines, Senior Director at Takeda Pharmaceuticals from March 2016 until July 2018, where he oversaw the drug product development of all vaccine programs. From August 2008 until March 2016, Dr. Singh served as the Head, Translational Research, Drug Product and Analytical Development at Novartis and was instrumental in the licensure of several key vaccines. He also led the development of the lipid nanoparticle platform of Novartis's RNA vaccine. Prior to Novartis, Dr. Singh also spent more than 10 years at Chiron Corporation, where he led the development of novel adjuvants and delivery systems for vaccines. Based on his contributions at Chiron and Novartis. Dr. Singh was elected as a Fellow of the American Association of Pharmaceutical Scientists in 2011. Dr. Singh holds a Ph.D. in Pharmaceutics and Drug Delivery from the National Institute of Immunology in New Delhi, India.

Board composition and election of directors

Our board of directors currently consists of six members, all of whom were elected as directors pursuant to a voting agreement that we have entered into with the holders of our preferred stock and certain holders of our

common stock. The voting agreement will terminate upon the closing of this offering and there will be no further contractual obligations regarding the election of our directors. Our directors hold office until their successors have been elected and qualified or until the earlier of their resignation or removal.

There are no family relationships among any of our directors and executive officers.

Classified board of directors

In accordance with our amended and restated certificate of incorporation, which will be in effect upon the closing of this offering, our board of directors will be divided into three classes of directors. At each annual meeting of stockholders, a class of directors will be elected for a three-year term to succeed the class whose terms are then expiring, to serve from the time of election and qualification until the third annual meeting following their election or until their earlier death, resignation or removal. Upon the closing of this offering, our directors will be divided among the three classes as follows:

The Class I directors will be , and their terms will expire at our first annual meeting of stockholders following this offering.

The Class II directors will be , and their terms will expire at our second annual meeting of stockholders following this offering.

The Class III directors will be , and their terms will expire at our third annual meeting of stockholders following this offering.

Our amended and restated certificate of incorporation will provide that the authorized number of directors may be changed only by resolution of our board of directors. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. The division of our board of directors into three classes with staggered three-year terms may delay or prevent a change of our management or a change in control. See the section of this prospectus captioned “Description of Capital Stock—Anti-takeover Effects of Our Certificate of Incorporation and By-laws” for a discussion of these and other anti-takeover provisions found in our amended and restated certificate of incorporation and amended and restated by-laws, which will become effective immediately prior to the closing of this offering.

Director independence

Under the rules of the Nasdaq Stock Market, independent directors must comprise a majority of a listed company’s board of directors within one year of the completion of its initial public offering. In addition, the rules of the Nasdaq Stock Market require that, subject to specified exceptions, each member of a listed company’s audit and compensation committees be independent and that director nominees be selected or recommended for the board’s selection by independent directors constituting a majority of the independent directors or by a nominating and corporate governance committee comprised solely of independent directors. Under the rules of the Nasdaq Stock Market, a director will only qualify as “independent” if, in the opinion of that company’s board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that such person is “independent” as defined under Nasdaq Stock Market and the Exchange Act rules.

Audit committee members must also satisfy the independence criteria set forth in Rule 10A-3 under the Exchange Act. In order to be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors or any other board committee: (1) accept, directly or indirectly, any consulting, advisory

or other compensatory fee from the listed company or any of its subsidiaries or (2) be an affiliated person of the listed company or any of its subsidiaries.

Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family relationships, our board of directors has determined that each of our directors, with the exception of Mr. Evans, is an "independent director" as defined under applicable rules of the Nasdaq Stock Market, including, in the case of all the members of our audit committee, the independence criteria set forth in Rule 10A-3 under the Exchange Act, and in the case of all the members of our compensation committee, the independence criteria set forth in Rule 10C-1 under the Exchange Act and are "non-employee directors" as defined in Section 16b-3 of the Exchange Act. In making such determination, our board of directors considered the relationships that each such non-employee director has with our Company and all other facts and circumstances that our board of directors deemed relevant in determining his or her independence, including the beneficial ownership of our capital stock by each non-employee director. Mr. Evans is not an independent director under these rules because he is our President and Chief Executive Officer.

Board committees

Our board of directors has established an audit committee, a compensation committee and a nominating and corporate governance committee, each of which will operate pursuant to a charter adopted by our board of directors and which will be effective prior to the consummation of this offering. The board of directors may also establish other committees from time to time to assist us and the board of directors in their duties. Upon the effectiveness of the registration statement of which this prospectus forms a part, the composition and functioning of all of our committees will comply with all applicable requirements of the Sarbanes-Oxley Act, the Nasdaq Stock Market and the Exchange Act. Upon our listing on Nasdaq, each committee's charter will be available on the corporate governance section of our website at www.beamtx.com. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider information contained on our website to be part of this prospectus or in deciding whether to purchase shares of our common stock.

Audit committee

The audit committee's responsibilities upon completion of this offering will include:

- appointing, approving the compensation of, and evaluating the qualifications, performance and independence of our independent registered public accounting firm;
- overseeing the work of our independent registered public accounting firm, including through the receipt and consideration of reports from such firm, and pre-approving all audit and permitted non-audit services to be performed by our independent registered public accounting firm;
- reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly financial statements and related disclosures, including earnings releases;
- reviewing and discussing with management and our independent registered public accounting firm any material issues regarding accounting principles and financial statement presentations;
- coordinating our board of directors' oversight of our internal control over financial reporting, disclosure controls and procedures, code of business conduct and ethics, procedures for complaints and legal and regulatory matters;
- discussing our risk management policies with management;

- establishing policies regarding hiring employees from our independent registered public accounting firm and procedures for the receipt and retention of accounting related complaints and concerns;
- meeting independently with our independent registered public accounting firm and management;
- reviewing and approving any related person transactions;
- overseeing our guidelines and policies governing risk assessment and risk management;
- overseeing the integrity of our information technology systems, process and data;
- preparing the audit committee report required by SEC rules;
- reviewing and assessing, at least annually, the adequacy of the audit committee's charter; and
- performing, at least annually, an evaluation of the performance of the audit committee.

All audit services and all non-audit services, other than de minimis non-audit services, to be provided to us by our independent registered public accounting firm must be approved in advance by our audit committee.

The members of our audit committee are . chairs the audit committee. Our board of directors has determined that each member of our audit committee has sufficient knowledge in financial and auditing matters to serve on the audit committee. Our board of directors has also determined that is an "audit committee financial expert," as defined under Item 407 of Regulation S-K.

We expect to satisfy the member independence requirements for the audit committee prior to the end of the transition period provided under current Nasdaq Listing Rules and SEC rules and regulations for companies completing their initial public offering.

Compensation committee

Our compensation committee's responsibilities upon completion of this offering will include:

- assisting our board of directors in developing and reviewing potential candidates for executive positions;
- reviewing our overall compensation strategy, including base salary, incentive compensation and equity-based grants;
- reviewing and approving corporate goals and objectives relevant to compensation of our chief executive officer and our other executive officers;
- recommending to our board of directors the compensation of our chief executive officer and other executive officers;
- reviewing and making recommendations to the board of directors with respect to director compensation;
- overseeing and administering our cash and equity incentive plans;
- reviewing, considering and selecting, to the extent determined to be advisable, a peer group of appropriate companies for purposing of benchmarking and analysis of compensation for our executive officers and directors;
- reviewing and approving all employment contract and other compensation, severance and change-in- control arrangements for our executive officers;

- recommending to our board of directors any stock ownership guidelines for our executive officers and non-employee directors;
- retaining, appointing or obtaining advice of a compensation consultant, legal counsel or other advisor, and determining the compensation and independence of such consultant or advisor;
- preparing, if required, the compensation committee report on executive compensation for inclusion in our annual proxy statement in accordance with the proxy rules;
- monitoring our compliance with the requirements of Sarbanes-Oxley relating to loans to directors and officers;
- overseeing our compliance with applicable SEC rules regarding shareholder approval of certain executive compensation matters;
- reviewing the risks associated with our compensation policies and practices;
- reviewing and assessing, at least annually, the adequacy of the compensation committee's charter; and
- performing, on an annual basis, an evaluation of the performance of the compensation committee.

The members of our compensation committee are . chairs the compensation committee. Prior to establishing a compensation committee, our board of directors made decisions relating to the compensation of our executive officers.

Nominating and governance committee

Our nominating and corporate governance committee's responsibilities upon completion of this offering will include:

- identifying individuals qualified to become members of our board of directors consistent with criteria approved by the board and receiving nominations for such qualified individuals;
- recommending to our board of directors the persons to be nominated for election as directors and to each committee of the board;
- establishing a policy under which our shareholders may recommend a candidate to the nominating and corporate governance committee for consideration for nomination as a director;
- reviewing and recommending committee slates on an annual basis;
- recommending to our board of directors qualified candidates to fill vacancies on our board of directors;
- developing and recommending to our board of directors a set of corporate governance principals applicable to us and reviewing the principles on at least an annual basis;
- reviewing and making recommendations to our board with respect to our board leadership structure and board committee structure;
- reviewing, in concert with our board of directors, our policies with respect to significant issues of corporate public responsibility;
- making recommendations to our board of directors processes for annual evaluations of the performance of our board of directors, our chief executive officer and committees of our board of directors;

- overseeing the process for annual evaluations of our board of directors, chief executive officer and committees of our board of directors and certifying that performance of our chief executive officer and other members of executive management is being properly evaluated;
- considering and reporting to our board of directors any questions of possible conflicts of interest of members of our board of directors;
- providing new director orientation and continuing education for existing directors on a periodic basis;
- overseeing the maintenance and presentation to our board of directors of management's plans for succession to senior management positions in the Company;
- reviewing and assessing, at least annually, the adequacy of the nominating and corporate governance committee's charter; and
- performing, on an annual basis, an evaluation of the performance of the nominating and corporate governance committee.

The members of our nominating and corporate governance committee are . chairs the nominating and corporate governance committee. Our board of directors has determined that each member of the nominating and corporate governance committee satisfies the independence standards of the applicable rules of the Nasdaq Stock Market.

Our board of directors may establish other committees from time to time.

Role of the board in risk oversight

Our board of directors has an active role, as a whole and also at the committee level, in overseeing the management of our risks. Our board of directors is responsible for general oversight of risks and regular review of information regarding our risks, including credit risks, liquidity risks and operational risks. The compensation committee is responsible for overseeing the management of risks relating to our executive compensation plans and arrangements. The audit committee is responsible for overseeing the management of risks relating to accounting matters and financial reporting. The nominating and governance committee is responsible for overseeing the management of risks associated with the independence of our board of directors and potential conflicts of interest. Although each committee is responsible for evaluating certain risks and overseeing the management of such risks, the entire board of directors is regularly informed through discussions from committee members about such risks. Our board of directors believes its administration of its risk oversight function has not negatively affected our board of directors' leadership structure.

Code of business conduct and ethics

Prior to the closing of this offering, we will adopt a written code of business conduct and ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, which will become effective upon the effectiveness of the registration statement of which this prospectus forms a part. Following this offering, a current copy of the code will be posted on the investor section of our website. In addition, we intend to post on our website all disclosures that are required by law or Nasdaq Stock Market rules concerning any amendments to, or waivers from, any provision of the code.

Executive and director compensation

The following discussion and analysis of compensation arrangements should be read with the compensation tables and related disclosures set forth below. This discussion contains forward looking statements that are based on our current plans and expectations regarding future compensation programs. Actual compensation programs that we adopt may differ materially from the programs summarized in this discussion.

Introduction

This section provides an overview of the compensation awarded to, earned by, or paid to our principal executive officer and our next two most highly compensated executive officers listed below in respect of their service to us for the fiscal year ended December 31, 2018. We refer to these individuals as our named executive officers. Our named executive officers are:

- John Evans, our President and Chief Executive Officer;
- Giuseppe Ciaramella, Ph.D., our Chief Scientific Officer; and
- Courtney Wallace, our Senior Vice President, Head of Business Development and Strategy.

Our board of directors was responsible for determining the compensation of our executive officers prior to the establishment of the compensation committee of our board of directors in February 2019. Going forward, the compensation committee of our board of directors will generally be responsible for determining the compensation of our executive officers. Our Chief Executive Officer made recommendations to our board of directors about the compensation of his direct reports in respect of fiscal year 2018, and is expected to do the same to the compensation committee of our board of directors in fiscal year 2019.

Summary compensation table

The following table sets forth the compensation awarded to, earned by, or paid to our named executive officers in respect of their service to us for the fiscal year ended December 31, 2018:

Name and principal position	Year	Salary ($)(1)	Bonus ($)(2)	Stock awards ($)(3)	Option awards ($)(4)	Nonequity incentive plan compensation ($)(5)	All other compensation ($)(6)	Total ($)
John Evans *President and Chief Executive Officer*	2018	$441,477	—	$2,976,205	$499,311	$ 270,000	$ 144	$4,187,137
Giuseppe Ciaramella, Ph.D. *Chief Scientific Officer*	2018	$338,889	$250,000	—	$256,492	$ 162,017	$ 18,451	$1,025,849
Courtney Wallace *SVP, Head of Business Development and Strategy*	2018	$183,333	$ 75,000	—	$138,587	$ 66,181	$ 29,453	$ 492,554

(1) Amounts shown for Mr. Evans, Dr. Ciaramella and Ms. Wallace include contributions made to our 401(k) plan.

(2) The amount shown for Dr. Ciaramella reflects a sign-on bonus. The amount shown for Ms. Wallace reflects a sign-on bonus ($25,000) and a relocation bonus ($50,000).

(3) The amount reported in this column represents the aggregate grant date fair value of restricted shares of our common stock granted to Mr. Evans in fiscal year 2018 computed in accordance with FASB ASC 718, excluding the effect of estimated forfeitures. The assumptions used to value the restricted stock for this purpose are set forth in Note 9 to our consolidated financial statements included elsewhere in this prospectus.

(4) The amounts reported in this column represent the aggregate grant date fair value of options to purchase our common stock granted to each of our named executive officers in fiscal year 2018 computed in accordance with FASB ASC 718, excluding the effect of estimated forfeitures. The assumptions used to value the options for this purpose are set forth in Note 11 to our consolidated financial statements included elsewhere in this prospectus. With respect to performance-based stock options granted to Mr. Evans and Dr. Ciaramella in fiscal year 2018, the grant date fair value of such options based on the probable outcome of the performance conditions on the grant date is $0. If all applicable performance milestones associated with such awards were achieved at maximum levels, the grant date fair value of the 2018 performance-based stock options would be $147,891 for Mr. Evans and $40,670 for Dr. Ciaramella.

(5) Amounts shown represent each named executive officer's annual bonus earned with respect to fiscal year 2018 based on the attainment of both corporate and individual performance goals as described below under "Annual Bonuses".

(6) The amount reported for Mr. Evans reflects company-paid group term life insurance premiums. The amount reported for Dr. Ciaramella reflects reimbursement of his COBRA continuation coverage through July 31, 2018 and company-paid group term life insurance premiums. The amount reported for Ms. Wallace reflects temporary housing ($29,357) and company-paid group term life insurance premiums.

Narrative disclosure to summary compensation table

Base salary

The employment agreement or letter agreement with each named executive officer, described below, establishes a base salary, which was determined at the time that the named executive officer commenced employment with us and is subject to periodic review. For 2019, Mr. Evan's base salary was increased to $472,500, Dr. Ciaramella's base salary was increased to $413,502 and Ms. Wallace's base salary was increased to $300,000.

Annual bonuses

With respect to 2018, each of Mr. Evans, Dr. Ciaramella and Ms. Wallace was eligible to receive an annual bonus, with the target amount of such bonus for each named executive officer set forth in his or her employment or letter agreement with us, described below. For 2018, the target bonus amounts, expressed as a percentage of base salary, for each of Mr. Evans, Dr. Ciaramella and Ms. Wallace were as follows: 50%, 40% and up to 30%, respectively. Annual bonuses for fiscal year 2018 for our named executive officers were based on the attainment of both corporate and individual performance goals as recommended by the compensation committee and determined by the board of directors. The corporate performance goals for 2018 related to launching the company, building the company and advancing the R&D pipeline. For 2018, Mr. Evans received 120% of his target bonus, or $270,000, Dr. Ciaramella received 120% of his target bonus, pro-rated to reflect the portion of the calendar year during which he was employed, or $162,017 and Ms. Wallace received 120% of her target bonus, pro-rated to reflect the portion of the calendar year during which she was employed, or $66,181.

Agreements with our named executive officers

Mr. Evans, Dr. Ciaramella and Ms. Wallace are each party to an employment or letter agreement with us that sets forth the terms and conditions of his or her employment. The material terms of the agreements are described below. The terms "cause," "good reason" and "change in control" referred to below are defined in the respective named executive officer's agreement.

Mr. Evans. We entered into a letter agreement with Mr. Evans on January 8, 2018 that provides for a base salary of $450,000 per year, subject to annual review by our compensation committee, and a target annual bonus equal to 50% of his annual base salary, with the actual amount of the bonus earned based on the terms of the applicable bonus plan developed by our board or our compensation committee in consultation with Mr. Evans. The letter agreement also provides that Mr. Evans will serve on our board of directors as long as he is our Chief Executive Officer, or until his earlier resignation or removal.

Mr. Evans's letter agreement provides for a grant of 3,815,647 restricted shares of our common stock, described below under "Equity Compensation". In addition, in the event that a pre-established performance condition was satisfied, Mr. Evans was entitled to the grant of an additional option (referred to as a "top-up option") equal to 1/19th of the number of shares issued in connection with the acquisition with same vesting schedule as the restricted shares as further described under "Equity Compensation" below. This "top-up option" was granted to Mr. Evans on July 13, 2018. Mr. Evans's letter agreement also provides for a grant of a

performance-based option to purchase 890,909 shares of our common stock, described below under “Equity Compensation”.

Mr. Evans’s letter agreement contains a perpetual confidentiality covenant and an assignment of intellectual property covenant. Mr. Evans is also party to an Employee Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement under which he has agreed not to compete with us or solicit our employees, consultants, customers or suppliers during and for one year following his termination of employment and has agreed to a perpetual confidentiality covenant and an assignment of intellectual property covenant.

Dr. Ciaramella. We entered into an employment agreement with Dr. Ciaramella on February 2, 2018 that provides for a base salary of $400,000 per year, subject to adjustment by our board of directors (or a committee thereof), and a target annual bonus equal to 40% of his annual base salary, with the actual amount of the bonus earned determined by our board of directors (or a committee thereof) in its discretion, based on Dr. Ciaramella’s performance and corporate performance compared to established goals. Dr. Ciaramella’s employment agreement provides for a sign-on bonus of $250,000, which amount would have been subject to repayment had he terminated his employment with us without good reason prior to the first anniversary of his start date. Dr. Ciaramella was entitled to reimbursement of his full costs of COBRA continuation coverage through July 31, 2018 because our employee benefit plans did not provide in-network coverage for the medical specialists providing care for Dr. Ciaramella and his dependents.

Dr. Ciaramella’s employment agreement provides for a grant of, at our discretion, an award of restricted stock or stock options corresponding to 1,225,000 shares of our common stock. Dr. Ciaramella was granted stock options in satisfaction of such provision, as described below under “Equity Compensation”. In addition, in the event that a pre-established performance condition was satisfied, Dr. Ciaramella was entitled to the grant of an additional option (referred to as a “top-up option”) equal to 1/79th of the number of shares issued in connection with the acquisition, subject to the same vesting schedule as the option grant as further described under “Equity Compensation” below. This “top-up option” was granted to Dr. Ciaramella on July 13, 2018. Dr. Ciaramella’s employment agreement also provides for a grant of a performance-based option to purchase 245,000 shares of our common stock, described below under “Equity Compensation”.

Dr. Ciaramella’s employment agreement contains a perpetual confidentiality covenant and an assignment of intellectual property covenant. Dr. Ciaramella is also party to an Employee Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement under which he has agreed not to compete with us or solicit our employees, consultants, customers or suppliers during and for one year following his termination of employment and has agreed to a perpetual confidentiality covenant and an assignment of intellectual property covenant.

Ms. Wallace. We entered into a letter agreement with Ms. Wallace on May 14, 2018 that provides for a base salary of $275,000 per year, subject to periodic review and adjustment, and an annual bonus with a target of up to 30% of her annual base salary, with the actual amount of the bonus earned based on individual and corporate performance. Ms. Wallace’s letter agreement provides for a sign-on bonus of $25,000 and a relocation bonus of $50,000, which amounts were subject to repayment if she had terminated her employment with us without good reason prior to the first anniversary of her start date. Ms. Wallace was also entitled to company-paid temporary housing for the first three months of her employment, in order to assist with her relocation.

Ms. Wallace’s letter agreement provides for a grant of options to purchase 625,000 shares of our common stock, described below under “Equity Compensation”. In addition, in the event that a pre-established performance condition was satisfied, Ms. Wallace was entitled to the grant of an additional option to purchase 425,000 shares of our common stock (referred to as a “top-up option”), subject to the same vesting schedule as

the option grant as further described under “Equity Compensation” below. The “top-up option” was granted to Ms. Wallace on July 13, 2018.

Ms. Wallace is also party to an Employee Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement under which she has agreed not to compete with us or solicit our employees, consultants, customers or suppliers during and for one year following her termination of employment and has agreed to a perpetual confidentiality covenant and an assignment of intellectual property covenant.

Severance upon termination of employment; change in control.

Mr. Evans. If Mr. Evans’s employment is terminated by us without cause or by him for good reason, he will be entitled to receive (i) continued payment of his base salary for a period of 12 months following termination, (ii) an amount equal to his target annual bonus in the year of termination, pro-rated to reflect the portion of the calendar year during which he was employed, (iii) continued vesting for 12 months of any unvested equity awards, (iv) extended exercisability of his performance-based options and any top-up options until the earlier of the expiration of the original term and the date that is 24 months following his termination and (v) payment of his full COBRA premiums for 12 months following his termination (or, if earlier, until the date on which Mr. Evans becomes eligible for coverage under a subsequent employer’s medical plan), subject to his eligibility for, and timely election of, COBRA coverage.

In the event of a change in control, any unvested equity awards held by Mr. Evans, other than the portion of such equity awards that would otherwise have vested during the six-month period following such change in control (referred to as the “carved-out equity”), will become fully vested and exercisable. The carved-out equity will remain outstanding and eligible to vest in accordance with its terms. If Mr. Evans’s employment is terminated by us without cause or by him for good reason within six months following the change in control, in addition to the severance benefits described above, the carved-out equity will become fully vested and exercisable.

Dr. Ciaramella. If Dr. Ciaramella’s employment is terminated by us without cause or by him for good reason, he will be entitled to receive (i) continued payment of his base salary for a period of 12 months following termination, (ii) an amount equal to his target annual bonus in the year of termination, pro-rated to reflect the portion of the calendar year during which he was employed, (iii) continued vesting for 12 months of any unvested equity awards, and (iv) payment of his full COBRA premiums for 12 months following his termination (or, if earlier, until the date on which Dr. Ciaramella becomes eligible for coverage under a subsequent employer’s medical plan), subject to his eligibility for, and timely election of, COBRA coverage.

In the event of a change in control, 50% of the unvested equity awards held by Dr. Ciaramella, other than the portion of such equity awards that would otherwise have vested during the six-month period following such change in control (referred to as the “carved-out equity”), will become fully vested and exercisable. The carved-out equity and any other outstanding unvested equity awards will remain outstanding and eligible to vest in accordance with their terms. If Dr. Ciaramella’s employment is terminated by us without cause or by him for good reason within six months following the change in control, in addition to the severance benefits described above, the carved-out equity will become fully vested and exercisable.

Ms. Wallace. If Ms. Wallace’s employment is terminated by us without cause, she will be entitled to receive (i) continued payment of her base salary for a period of six months following termination and (ii) payment of COBRA premiums at the same rate as we pay for active employees for six months following her termination.

Severance Subject to Release of Claims. Our obligation to provide an executive with severance payments and other benefits under the executive’s employment or letter agreement is conditioned on the executive signing a

release of claims in favor of us. In addition, our obligation to provide Mr. Evans with severance payments and other benefits under his letter agreement is conditioned on his remaining available to provide consulting services to us as reasonably requested by our board of directors.

Equity compensation

Mr. Evans, Dr. Ciaramella and Ms. Wallace each received incentive equity grants in fiscal year 2018 under our 2017 Stock Option and Grant Plan, or our 2017 Plan.

On January 8, 2018, Mr. Evans was granted 3,815,647 restricted shares of our common stock, which vested as to 25% on the first anniversary of the grant date and vest in 36 equal monthly installments thereafter, generally subject to Mr. Evans's continued employment with us through the applicable vesting date. On May 8, 2018, Mr. Evans was granted an option to purchase 890,909 shares of our common stock, which vests as to 50% upon the achievement of certain development milestones related to editing applications and as to 50% upon the achievement of a closing price hurdle following our IPO, in each case generally subject to Mr. Evans's continued employment with us through December 31, 2022. On July 13, 2018, Mr. Evans was granted an option to purchase 2,419,933 shares of our common stock, which vested as to 25% on January 8, 2019 and vests in 36 equal monthly installments thereafter, generally subject to Mr. Evans's continued employment with us through the applicable vesting date.

On May 8, 2018, Dr. Ciaramella was granted an option to purchase 245,000 shares of our common stock, which vests as to 50% upon the achievement of certain development milestones related to editing applications and as to 50% upon the achievement of a closing price hurdle following our IPO, in each case generally subject to Dr. Ciaramella's continued employment with us through December 31, 2022. On May 8, 2018, Dr. Ciaramella was granted an option to purchase 1,225,000 shares of our common stock, and on July 13, 2018, Dr. Ciaramella was granted an option to purchase 582,009 shares of our common stock. Each grant vested as to 25% on February 26, 2019 and vests in 36 equal monthly installments thereafter, generally subject to Dr. Ciaramella's continued employment with us through the applicable vesting date.

On May 8, 2018, Ms. Wallace was granted an option to purchase 625,000 shares of our common stock, and on July 13, 2018, Ms. Wallace was granted an option to purchase 425,000 shares of our common stock. Each of Ms. Wallace's grants vested as to 25% on May 1, 2019 and vests in 36 equal monthly installments thereafter, generally subject to Ms. Wallace's continued employment with us through the applicable vesting date.

Severance and change of control payments and benefits

Each of our named executive officers is entitled to severance benefits under his or her employment or letter agreement upon a termination of employment in certain circumstances or, for Mr. Evans and Dr. Ciaramella, upon the occurrence of a change in control, as described above under "Agreements with our Named Executive Officers."

Employee and retirement benefits

We currently provide broad-based health and welfare benefits that are available to all of our employees, including our named executive officers, including health, life, disability, vision, and dental insurance. In addition, we maintain a 401(k) retirement plan for our full-time employees. The 401(k) plan also permits us to make discretionary employer contributions. We did not make any employer contributions to the 401(k) plan in 2018. Other than the 401(k) plan, we do not provide any qualified or non-qualified retirement or deferred compensation benefits to our employees, including our named executive officers.

Outstanding awards at fiscal year-end table

The following table sets forth information concerning outstanding equity awards held by each of our named executive officers as of December 31, 2018:

	Option awards					Stock awards	
Name	Number of securities underlying unexercised options exercisable (#)	Number of securities underlying unexercised options unexercisable (#)	Equity incentive plan awards: Number of securities underlying unexercised unearned options (#)	Option exercise price ($/share)	Option expiration date	Number of shares of stock that have not vested (#)	Market value of shares of stock that have not vested ($)(1)
John Evans	—	—	—	—	—	638,898(2)	$ 600,564
	—	—	—	—	—	3,815,647(3)	$ 3,586,708
	—		890,909	$ 0.15	5/8/2028(4)	—	—
	—	2,419,933	—	$ 0.23	7/13/2028(5)	—	—
Giuseppe Ciaramella, Ph.D.	—	—	245,000	$ 0.15	5/8/2028(6)	—	—
	—	1,225,000	—	$ 0.15	5/8/2028(7)	—	—
	—	582,009	—	$ 0.23	7/13/2028(8)	—	—
Courtney Wallace	—	625,000	—	$ 0.15	5/8/2028(9)	—	—
	—	425,000	—	$ 0.23	7/13/2028(10)	—	—

(1) Based on the estimated fair market value of a share of our common stock on December 31, 2018 ($0.94), as determined by our board of directors.

(2) Represents 1,022,727 restricted shares of our common stock granted on August 17, 2017, of which 383,829 restricted shares vested in equal monthly installments through January 3, 2018, 25% of the remaining 638,898 restricted shares vested on January 8, 2019 and 75% of the remaining shares vest in 36 monthly installments thereafter, generally subject to Mr. Evans's continued employment with us through the applicable vesting date.

(3) Represents 3,815,647 restricted shares of our common stock granted on January 8, 2018, which vested as to 25% of the shares on January 8, 2019 and vest in 36 equal monthly installments thereafter, generally subject to Mr. Evans's continued employment with us through the applicable vesting date.

(4) Represents an option to purchase 890,909 shares of our common stock granted on May 8, 2018, which vests as to 50% of the underlying shares upon the achievement of certain development milestones related to editing applications and as to 50% of the underlying shares upon the achievement of a closing price hurdle following our IPO, in each case generally subject to Mr. Evans's continued employment with us through December 31, 2022.

(5) Represents an option to purchase 2,419,933 shares of our common stock granted on July 13, 2018, which vested as to 25% of the underlying shares on January 8, 2019 and vests in 36 equal monthly installments thereafter, generally subject to Mr. Evans's continued employment with us through the applicable vesting date.

(6) Represents an option to purchase 245,000 shares of our common stock granted on May 8, 2018, which vests as to 50% of the underlying shares upon the achievement of certain development milestones related to editing applications and as to 50% of the underlying shares upon the achievement of a closing price hurdle following our IPO, in each case generally subject to Dr. Ciaramella's continued employment with us through December 31, 2022.

(7) Represents an option to purchase 1,225,000 shares of our common stock granted on May 8, 2018, which vested as to 25% of the underlying shares on February 26, 2019 and vests in 36 equal monthly installments thereafter, generally subject to Dr. Ciaramella's continued employment with us through the applicable vesting date.

(8) Represents an option to purchase 582,009 shares of our common stock granted on July 13, 2018, which vested as to 25% of the underlying shares on February 26, 2019 and vests in 36 equal monthly installments thereafter, generally subject to Dr. Ciaramella's continued employment with us through the applicable vesting date.

(9) Represents an option to purchase 625,000 shares of our common stock granted on May 8, 2018, which vested as to 25% of the underlying shares on May 1, 2019 and vests in 36 equal monthly installments thereafter, generally subject to Ms. Wallace's continued employment with us through the applicable vesting date.

(10) Represents an option to purchase 425,000 shares of our common stock granted on July 13, 2018, which vested as to 25% of the underlying shares on May 1, 2019 and vests in 36 equal monthly installments thereafter, generally subject to Ms. Wallace's continued employment with us through the applicable vesting date.

Director compensation

The following table sets forth information concerning the compensation awarded to, earned by or paid to our non-employee directors during the fiscal year ended December 31, 2018. Mr. Evans's compensation for 2018 is included with that of our other named executive officers above.

Name	Fees earned or paid in cash ($)(1)	Option awards ($)(2)	Total ($)
Kristina Burow(3)	—	—	—
Mark Fishman, M.D.	33,334	150,834	184,168
Carole Ho, M.D.	12,500	—	12,500
Stephen Knight, M.D.(3)	—	—	—
Robert Nelsen(3)	—	—	—
Michael Yi(3)(4)	—	—	—
Feng Zhang, Ph.D.(5)	—	31,502	31,502

(1) Amount represents cash fees earned in fiscal year 2018, pro-rated for the director's service during the year.

(2) The amounts reported in this column represent the aggregate grant date fair value of options to purchase our common stock granted to Dr. Fishman and Dr. Zhang in fiscal year 2018 computed in accordance with FASB ASC 718, excluding the effect of estimated forfeitures. The assumptions used to value the options for this purpose are set forth in Note 11 to our consolidated financial statements included elsewhere in this prospectus. As of December 31, 2018, Dr. Fishman held options to purchase our 1,167,000 shares of our common stock and Dr. Zhang held options to purchase 290,000 shares of our common stock.

(3) Directors who are affiliated with our investors do not receive compensation in respect of their service as members of our board of directors.

(4) Mr. Yi resigned from our board of directors effective July 16, 2019.

(5) Dr. Zhang resigned from our board of directors effective February 21, 2019.

Director compensation

In respect of their service on our board of directors in fiscal year 2018, Dr. Fishman and Dr. Ho were each entitled to receive a $50,000 cash retainer, pro-rated to reflect the portion of the calendar year during which he or she performed services on our board of directors, and stock option grants as determined by our board of directors. In connection with this offering, we expect to adopt a formal director compensation policy.

On April 30, 2018, we entered into a consulting agreement with Dr. Fishman on April 30, 2018 pursuant to which he agreed to provide certain advisory services to our Chief Executive Officer and us. The term of the consulting agreement has been extended to April 29, 2020. As compensation for his service, Dr. Fishman received a grant of an option to purchase 460,000 shares of our common stock on May 8, 2018, which vested as to 25% of the underlying shares on April 30, 2019, with the remainder vesting in 12 equal quarterly installments thereafter, subject to his continued service through the applicable vesting date. In addition, in the event that a pre-established performance condition was satisfied, Dr. Fishman was entitled to the grant of an option to purchase 255,000 shares of our common stock. This grant was made to Dr. Fishman on July 13, 2018 and vested as to 25% of underlying shares on May 8, 2019, with the remainder vesting in 12 equal quarterly installments thereafter, subject to his continued service through the applicable vesting date.

In respect of his service as a member of the Board, Dr. Fishman received a grant of an option to purchase 290,000 shares of our common stock on May 8, 2018, which vested as to 25% of the underlying shares on May 11, 2019, with the remainder vesting in 12 equal quarterly installments thereafter and, after the satisfaction of the pre-established performance condition as described above, a subsequent grant of an option to purchase 162,000 shares of our common stock on July 13, 2018, which vested as to 25% of the underlying shares on May 11, 2019, with the remainder vesting in 12 equal quarterly installments thereafter, in each case, subject to Dr. Fishman's continued service through the applicable vesting date.

In respect of his service as a member of our board of directors, Dr. Zhang received a grant of an option to purchase 290,000 shares of our common stock on May 8, 2018, which vested as to 25% of the underlying shares on February 16, 2019, with the remainder vesting in 12 equal quarterly installments thereafter. Dr. Zhang forfeited the unvested portion of his option in connection with his resignation.

Dr. Ho did not receive a grant of an option to purchase shares of our common stock during 2018. On February 13, 2019, Dr. Ho received a grant of an option to purchase 290,000 shares of our common stock, which vests as to 25% of the underlying shares on October 19, 2019, with the remainder vesting in 36 equal monthly installments thereafter.

Equity and cash plans

2017 Stock option and grant plan

In 2017, our board of directors adopted and our stockholders approved our 2017 Plan. Our 2017 Plan has been amended from time to time to increase the aggregate number of shares of our common stock reserved for issuance under our 2017 Plan, and was most recently amended on May 17, 2019. Our 2017 Plan permits the grant of incentive stock options to our employees and the grant of nonqualified stock options, restricted stock awards, restricted stock units, and unrestricted stock awards to our officers, employees, directors, consultants, and other key persons of the company. Subject to adjustment, the maximum number of shares that may be granted under our 2017 Plan is 36,227,273. As of June 30, 2019, options to purchase 19,987,232 shares of our common stock and 6,882,312 shares of restricted stock were outstanding under our 2017 Plan and 9,067,273 shares of our common stock remained available for future issuance. Shares underlying awards that are forfeited, canceled, reacquired by the company prior to vesting, satisfied without the issuance of stock or otherwise terminated (other than by exercise) and shares that are withheld upon exercise of an option or settlement of an award to cover the exercise price or tax withholding will become available for subsequent awards under our 2017 Plan. It is anticipated that no further awards will be made under our 2017 Plan following the completion of this offering. In connection with this offering, we intend to adopt a new omnibus equity plan under which we will grant equity-based awards in connection with or following this offering. This summary is not a complete description of all provisions of our 2017 Plan and is qualified in its entirety by reference to the 2017 Plan, which is filed as an exhibit to the registration statement of which this prospectus is part.

Plan administration

Our board of directors, or a committee of our board of directors, administers our 2017 Plan. As used in this summary, the term “administrator” refers to our board of directors and its authorized delegate, as applicable. Subject to the provisions of our 2017 Plan, the administrator has the authority to, among other things, grant awards consistent with the terms of our 2017 Plan, to select the individuals to whom awards may be granted, to determine the time or times of grant, to determine the number of shares to be covered by any award and the price, exercise price, conversion ratio or other price relating thereto, to determine and modify the terms and conditions, including restrictions, of any award, to approve the form of award agreements, to accelerate at any time the exercisability or vesting of all or any portion of any award, to impose any limitations on awards, to interpret the terms and provisions of the 2017 Plan and any award, to make all determinations it deems advisable for the administration of the Plan and to otherwise supervise the administration of the Plan.

Non-transferability of awards

Our 2017 Plan generally does not allow for the transfer of awards and awards may generally be exercised only by the holder of an award, during his or her lifetime. However, the administrator may, in its discretion, allow for

the transfer by gift of a nonqualified stock option from an optionee to his or her family members, to trusts for the benefit of such family members, or to partnerships in which such family members are the only partners, provided that the transferee agrees in writing with the company to be bound by all of the terms and conditions of the 2017 Plan and the applicable award agreement.

Adjustments upon changes in capitalization, merger, or certain other transactions

Our 2017 Plan provides that in the event of a reorganization, recapitalization, reclassification, stock dividend, stock split, reverse stock split or other similar change in the company's capital stock, the administrator will make appropriate and proportionate adjustments to the maximum number of shares reserved for issuance under our 2017 Plan, the number and kind of shares or other securities subject to any then-outstanding awards under our 2017 Plan, the repurchase price, if any, per share subject to each outstanding award, and the exercise price of each share subject to any then-outstanding stock options under our 2017 Plan.

In the case of a sale event (which, as defined in our 2017 Plan, excludes the company's initial public offering), (i) our 2017 Plan, all outstanding options and all outstanding and unvested restricted stock and restricted stock unit awards will terminate and be forfeited unless assumed or continued by the successor entity, or substituted for awards of the successor entity or parent; (ii) each holder of stock options that are, or become, vested and exercisable prior to or in connection with the sale event will be permitted to exercise his or her stock options within a period of time specified by the administrator; (iii) in the event of the forfeiture of restricted stock, the company will repurchase the restricted stock at a price per share equal to the original per-share purchase price paid by the holder of such restricted stock; and (iv) the company will have the right, but not the obligation, to make or provide for a cash payment to the holders of options, restricted stock and restricted stock unit awards, without any consent of the holders, in exchange for the cancellation thereof.

Amendment and termination

Our board of directors may, at any time, amend or discontinue our 2017 Plan and the administrator may, at any time, amend or cancel any outstanding award, provided, however, that no such action may adversely affect rights under any outstanding award without the consent of the holder of the award. The administrator may also exercise its discretion to reduce the exercise price of outstanding stock options or to effect repricing through the cancellation of outstanding stock options and grant of replacement awards.

2019 Compensation plans

We expect that we will adopt a new equity incentive plan and a new cash incentive plan in connection with this offering, the terms of which will be described in a subsequent filing.

Certain relationships and related party transactions

The following is a summary of transactions since our formation in January 2017 to which we have been a party in which the amount involved exceeded $120,000 and in which any of our executive officers, directors, promoters or beneficial holders of more than 5% of our capital stock had or will have a direct or indirect material interest, other than compensation arrangements which are described under the section of this prospectus captioned “Executive and Director Compensation.”

Private placements

Series A-1 convertible preferred stock

In June 2017, February 2018, May 2018, we completed the sale of an aggregate of 26,833,324 shares of our Series A-1 convertible preferred stock at a purchase price of $1.00 per share for an aggregate purchase price of $26.8 million. The shares were issued in three tranches, with the first tranche of 5,000,000 shares closing in June 2017, the second tranche of 21,833,324 shares closing in February 2018 and May 2018. Each share of our Series A-1 convertible preferred stock will convert into shares of our common stock immediately prior to the closing of this offering, including adjustments in connection with the 1-for- reverse stock split of our common stock effected on , 2019. The following table summarizes purchases of shares of our Series A-1 convertible preferred stock by holders of more than 5% of our capital stock and entities affiliated with a member of our board of directors.

Name of stockholder	Director(s)	Number of series A-1 convertible preferred stock	Approximate purchase price
Funds affiliated with ARCH Venture Partners	Kristina Burow Robert Nelsen	12,000,000	$ 12,000,000
F-Prime Capital Partners Healthcare Fund V LP	Stephen Knight	9,819,820	$ 9,819,820
HH Beam Holdings LLC		222,222	$ 222,222
TLS Beta Pte. Ltd.		277,777	$ 277,777

Series A-2 convertible preferred stock

In February 2018, we completed the sale of an aggregate of 63,604,886 shares of our Series A-2 convertible preferred stock at a purchase price of $1.50 per share for an aggregate purchase price of $127.2 million. Each share of our Series A-2 convertible preferred stock will convert into shares of our common stock immediately prior to the closing of this offering in accordance with our certificate of incorporation, including adjustments in connection with the 1-for- reverse stock split of our common stock effected on , 2019 . The following table summarizes purchases of shares of our Series A-2 convertible preferred stock by holders of more than 5% of our capital stock and entities affiliated with a member of our board of directors.

Name of stockholder	Director(s)	Number of Series A-2 convertible preferred stock	Approximate purchase price
Funds affiliated with ARCH Venture Partners	Kristina Burow Robert Nelsen	24,666,684	$ 37,000,026
F-Prime Capital Partners Healthcare Fund V LP	Stephen Knight	21,146,743	$ 31,720,114
HH Beam Holdings LLC		2,828,595	$ 4,242,892
TLS Beta Pte. Ltd.		3,535,743	$ 5,303,614

Series B convertible preferred stock

In November 2018, December 2018, January 2019 and February 2019 we completed the sale of an aggregate of 40,178,574 shares of our Series B convertible preferred stock at a purchase price of $3.36 per share for an aggregate purchase price of $135.0 million. Each share of our Series B convertible preferred stock will convert into shares of our common stock immediately prior to the closing of this offering, including adjustments in connection with the 1-for- reverse stock split of our common stock effected on , 2019. The following table summarizes purchases of shares of our Series B convertible preferred stock by holders of more than 5% of our capital stock and entities affiliated with a member of our board of directors.

Name of stockholder	Director	Number of series be preferred stock		Approximate purchase price
Funds affiliated with ARCH Venture Partners	Kristina Burow Robert Nelsen	297,620	$	1,000,003
F-Prime Capital Partners Healthcare Fund V LP	Stephen Knight	297,620	$	1,000,003
HH Beam Holdings LLC		8,928,573	$	30,000,002
TLS Beta Pte. Ltd.		7,440,476	$	24,999,999

Acquisition of Blink Therapeutics Inc.

On May 9, 2018, we, Blink and Anaheim Merger Sub Inc., our wholly-owned subsidiary, or Merger Sub, entered into an Option Agreement, pursuant to which, on September 25, 2018, Merger Sub merged with and into Blink, with Blink being the surviving corporation and our wholly-owned subsidiary, or the Blink Merger. In connection with the execution of the Option Agreement, we paid Blink an upfront option premium of $121,000. As a result of the Blink Merger, holders of Blink's series A preferred stock, $0.01 par value, or the Blink Preferred Stock, received two shares of our Series A-2 redeemable convertible preferred stock for each share of Blink Preferred Stock and holders of Blink's common stock, $0.001 par value, or the Blink Common Stock, received two shares of our common stock for each share of Blink Common Stock. The following table summarizes the number of shares of our Series A-2 convertible preferred stock acquired in the Blink Merger by holders of more than 5% of our capital stock and entities affiliated with a member of our board of directors.

Name of stockholder	Director(s)	Shares of beam series A-2 convertible preferred stock received in blink merger
Funds affiliated with ARCH Venture Partners	Kristina Burow Robert Nelsen	14,000,000
F-Prime Capital Partners Healthcare Fund V LP	Stephen Knight	11,539,912
TLS Beta Pte. Ltd.		581,394
HH Beam Holdings LLC		465,116

The following table summarizes the number of shares of our common stock acquired in the Blink Merger by holders of more than 5% of our capital stock.

Name of stockholder	Shares of beam common stock received in blink merger
Feng Zhang	8,506,000
David Liu	1,840,000

Founder academic consulting agreements

On March 1, 2017, we entered into Academic Consulting Agreements with each of David Liu, Feng Zhang and Keith Joung, or the Founders, pursuant to which the Founders provide advisory services as mutually determined by us and the Founders from time to time. The initial term of the Academic Consulting Agreements is for four years, and the agreements continue in effect thereafter until terminated by either party. Under the terms of the agreements, we pay each of the Founders a consulting fee of $150,000 per year, payable in monthly installments in arrears beginning with the initial closing of our Series A-1 convertible preferred stock on June 28, 2017. Additionally, we agreed to reimburse each of the Founders for reasonable business expenses incurred in connection with the performance of their services under the agreements. To date, we have paid each of the Founders $350,000 for consulting services pursuant to these agreements.

Director affiliations

Some of our directors are affiliated with and serve on our board of directors as representatives of entities which beneficially own or owned 5% or more of our common stock, as indicated below:

Director	Principal stockholder
Kristina Burow	Funds affiliated with ARCH Venture Partners
Robert Nelsen	Funds affiliated with ARCH Venture Partners
Stephen Knight	F-Prime Capital Partners Healthcare Fund V LP

Investor rights agreement

We are party to an amended and restated investor rights agreement, or the Investor Rights Agreement, with each holder of our convertible preferred stock, which includes each holder of more than 5% of our capital stock and certain of our directors (or, in some cases, entities affiliated therewith). The Investor Rights Agreement imposes certain affirmative obligations on us, and also grants certain rights to the holders, including certain registration rights with respect to the registrable securities held by them. See “Description of Capital Stock—Registration Rights” for additional information regarding these registration rights. Other provisions of the Investor Rights Agreement will terminate upon completion of this offering.

Employment agreements

We have entered into employment agreements with certain of our executive officers. See “Executive and Director Compensation—Narrative Disclosure to Summary Compensation Table” for a further discussion of these arrangements.

We have granted stock options and/or restricted stock to our named executive officers, other executive officers and certain of our directors. See the section of this prospectus captioned “Executive and Director Compensation.”

Director and officer indemnification and insurance

We have agreed to indemnify each of our directors and executive officers against certain liabilities, costs and expenses, and have purchased directors’ and officers’ liability insurance. We also maintain a general liability insurance policy which covers certain liabilities of directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers.

Related person transaction policy

Our board of directors has adopted a written related person transaction policy, to be effective upon the effectiveness of the registration statement of which this prospectus forms a part, setting forth the policies and procedures for the review and approval or ratification of related person transactions. This policy will cover, with certain exceptions set forth in Item 404 of Regulation S-K under the Securities Act of 1933, as amended, any transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships, in which we were or are to be a participant, where the amount involved exceeds $120,000 in any fiscal year and a related person had, has or will have a direct or indirect material interest, including without limitation, purchases of goods or services by or from the related person or entities in which the related person has a material interest, indebtedness, guarantees of indebtedness and employment by us of a related person. In reviewing and approving any such transactions, our audit committee is tasked to consider all relevant facts and circumstances, including, but not limited to, whether the transaction is on terms comparable to those that could be obtained in an arm's length transaction and the extent of the related person's interest in the transaction. All of the transactions described in this section occurred prior to the adoption of this policy.

Principal stockholders

The following table sets forth certain information with respect to the beneficial ownership of our common stock at June 30, 2019, as adjusted to reflect the sale of common stock offered by us in this offering, for:

- each person who we know beneficially owns more than 5% of our common stock;
- each of our directors;
- each of our named executive officers; and
- all of our directors and executive officers as a group.

The number of shares beneficially owned by each stockholder is determined under rules issued by the SEC. Under these rules, a person is deemed to be a “beneficial” owner of a security if that person has or shares voting power or investment power, which includes the power to dispose of or to direct the disposition of such security. Except as indicated in the footnotes below, we believe, based on the information furnished to us, that the individuals and entities named in the table below have sole voting and investment power with respect to all shares of common stock beneficially owned by them, subject to any applicable community property laws.

Percentage ownership of our common stock before this offering is based on 174,863,507 shares of our common stock outstanding as of June 30, 2019, after giving effect to the automatic conversion of all outstanding shares of our convertible preferred stock into shares of our common stock immediately prior to the closing of this offering, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus. Percentage ownership of our common stock after this offering is based on shares of our common stock outstanding as of June 30, 2019, after giving effect to the automatic conversion of all outstanding shares of our convertible preferred stock as described above and our issuance of shares of our common stock in this offering. In computing the number of shares beneficially owned by an individual or entity and the percentage ownership of that person, shares of common stock subject to options, warrants or other rights held by such person that are currently exercisable or that will become exercisable within 60 days of June 30, 2019 are considered outstanding, although these shares are not considered outstanding for purposes of computing the percentage ownership of any other person. Unless noted otherwise, the address of all listed stockholders is 26 Landsdowne Street, 2nd Floor, Cambridge, MA 02139.

Name of beneficial owner	Number of shares beneficially owned	Percentage of shares beneficially owned	
		Before offering	After offering
5% or greater stockholders:			
Funds affiliated with ARCH Venture Partners(1)	36,964,304	21.1%	
F-Prime Capital Partners Healthcare Fund V LP(2)	31,264,183	17.9%	
David Liu	14,718,787	8.4%	
Feng Zhang	11,608,803	6.6%	
HH Beam Holdings LLC(3)	11,979,390	6.9%	
TLS Beta Pte. Ltd.(4)	11,253,996	6.4%	
Directors and Named Executive Officers:			
John Evans(5)	5,769,264	3.3%	
Giuseppe Ciaramella(6)	667,628	*	
Courtney Wallace(7)	328,124	*	
Kristina Burow	—	*	
Mark Fishman, M.D.(8)	440,954	*	
Stephen Knight, M.D.	—	*	
Carole Ho, M.D.	—	*	
Robert Nelsen	—	*	
All executive officers and directors as a group (11 persons)(9)	7,414,220	4.2%	

* Less than 1%

(1) Represents (a) 18,482,151 shares of common stock issuable upon exercise of convertible preferred stock held by ARCH Venture Fund IX Overage, L.P., or ARCH IX Overage, and (b) 18,482,153 shares of common stock issuable upon exercise of convertible preferred stock held by ARCH Venture Fund IX, L.P., or ARCH IX. ARCH Venture Partners IX Overage, L.P., or the GPLP, as the sole general partner of ARCH IX Overage, has the power to vote and dispose of the shares held of record by ARCH IX Overage and may be deemed to beneficially own certain of the shares held of record by ARCH IX Overage. ARCH Venture Partners IX, L.P., or AVP IX LP, has the power top vote and dispose of the shares held of record by ARCH IX and may be deemed to beneficially own certain of the shares held of record by ARCH IX. GPLP and AVP IX LP disclaim beneficial ownership of all shares held of record by ARCH IX Overage and ARCH IX, respectively, in which the GPLP or AVP IX LP does not have an actual pecuniary interest. ARCH Venture Partners IX, LLC, or the GPLLC, as the sole general partner of the GPLP and AVP IX LP, has the power to vote and dispose of the shares held of record by ARCH IX Overage and ARCH IX and may be deemed to beneficially own certain of the shares held of record by ARCH IX Overage and ARCH IX. The GPLLC disclaims beneficial ownership of all shares held of record by ARCH IX Overage and ARCH IX in which it does not have an actual pecuniary interest. Keith Crandell, Clinton Bybee, and Robert Nelsen are the managing directors of the GPLLC, share the power to vote and dispose of the shares held of record by ARCH IX Overage and ARCH IX and may be deemed to beneficially own certain of the shares held of record by ARCH IX Overage and ARCH IX. The managing directors disclaim beneficial ownership of all shares held of record by ARCH IX Overage and ARCH IX in which they do not have an actual pecuniary interest. The address of all filing persons is 8755 W. Higgins Road, Suite 1025, Chicago, IL 60631.

(2) F-Prime Capital Partners Healthcare Advisors Fund V LP is the general partner of F-Prime Capital Partners Healthcare Fund V LP. F-Prime Capital Partners Healthcare Advisors Fund V LP is solely managed by Impresa Management LLC, the managing member of its general partner

and investment manager. Impressa Management LLC is owned, directly or indirectly, by various shareholders and employees of FMR LLC. Each of the entities listed above expressly disclaims beneficial ownership of the securities listed above except to the extent of any pecuniary interest therein. The address of these entities is 245 Summer Street, Boston, MA 02210.

(3) Consists of 8,928,573 shares of common stock issuable upon conversion of shares of Series B Preferred Stock, 2,828,595 shares of common stock issuable upon conversion of shares of Series A2 Preferred Stock an 222,222 shares of common stock issuable upon conversion of shares of Series A1 Preferred Stock held by HH Beam Holdings LLC. HH Beam Holdings LLC is beneficially owned and controlled by Hillhouse Fund IV, L.P. Hillhouse Capital Management, Ltd. acts as the sole management company of Hillhouse Fund IV, L.P., which is in turn ultimately controlled by Mr. Lei Zhang. The registered address of HH Beam Holdings LLC is Citco Trustees (Cayman) Limited, 89 Nexus Way, Camana Bay, PO Box 31106, Grand Cayman KY1-1205, Cayman Islands.

(4) TLS Beta Pte. Ltd. is a wholly-owned subsidiary of Temasek Life Sciences Private Limited, which is a wholly-owned subsidiary of Fullerton Management Pte. Ltd., which is a wholly owned subsidiary of Temasek Holdings (Private) Limited. The address of these entities is 60B Orchard Road, #06-18 Tower 2, The Atrium@Orchard, Singapore 238891.

(5) Includes 1,922,982 shares of unvested restricted stock as of June 30, 2019 that Mr. Evans has the ability to vote. Includes options to purchase 857,890 shares of common stock that are exercisable within 60 days of June 30, 2019.

(6) Includes options to purchase 677,628 shares of common stock that are exercisable within 60 days of June 30, 2019.

(7) Includes options to purchase 328,124 shares of common stock that are exercisable within 60 days of June 30, 2019.

(8) Includes 76,267 shares of common stock issuable upon exercise of convertible preferred stock and options to purchase 364,687 shares of common stock that are exercisable within 60 days of June 30, 2019.

(9) Includes 4,838,374 shares of unvested restricted stock as of June 30, 2019 that John Evans has the ability to vote. Includes options to purchase 1,127,002 shares of common stock that are exercisable within 60 days of June 30, 2019.

Description of capital stock

Capital structure

The following description of our capital stock and certain provisions of our amended and restated certificate of incorporation and amended and restated by-laws are summaries and are qualified by reference to the amended and restated certificate of incorporation and the amended and restated by-laws that will be in effect upon the closing of this offering. Copies of these documents will be filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part. The descriptions of our common stock and preferred stock reflect changes to our capital structure that will occur upon the closing of this offering.

General

Upon completion of this offering, our authorized capital stock will consist of shares, all with a par value of $0.01 per share, of which:

- shares are designated as common stock; and
- shares are designated as preferred stock.

Common stock

As of December 31, 2018, after giving effect to the automatic conversion of all outstanding shares of our convertible preferred stock into 119,308,387 shares of our common stock immediately prior to the closing of this offering, we had outstanding 144,265,195 shares of common stock held of record by 58 stockholders.

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. An election of directors by our stockholders shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election. Holders of common stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of any series of preferred stock that we may designate and issue in the future.

In the event of our liquidation or dissolution, the holders of common stock are entitled to receive proportionately our net assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding preferred stock. Holders of common stock have no preemptive, subscription, redemption or conversion rights. Our outstanding shares of common stock are, and the shares offered by us in this offering will be, when issued and paid for, validly issued, fully paid and nonassessable. The rights, preferences and privileges of holders of common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Preferred stock

As of December 31, 2018, there were 119,308,387 shares of our convertible preferred stock outstanding. Immediately prior to the closing of this offering, all outstanding shares of our redeemable convertible preferred stock will convert into 119,308,387 shares of our common stock.

Under the terms of our amended and restated certificate of incorporation that will become effective immediately prior to the closing of this offering, our board of directors is authorized to direct us to issue shares of preferred stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions, future financings and other corporate purposes, could have the effect of making it more difficult for a third-party to acquire, or could discourage a third-party from seeking to acquire, a majority of our outstanding voting stock. Upon the closing of this offering, there will be no shares of preferred stock outstanding, and we have no present plans to issue any shares of preferred stock.

Options

As of December 31, 2018, options to purchase 11,144,996 shares of our common stock were outstanding under our 2017 Plan, of which 286,384 options were vested as of that date.

Registration rights

The Investor Rights Agreement grants the parties thereto certain registration rights in respect of the “registrable securities” held by them, which securities include (i) the shares of our common stock issuable or issued by holders of shares of our convertible preferred stock or upon conversion or exercise of any other securities and (ii) any common stock issued or issuable as a dividend or other distribution with respect to, or in exchange for or in replacement of, the shares referenced in (i) and (iii) any shares of our common stock, and any shares of our common stock issuable upon the conversion or exercise of any other securities, held by persons holding the securities described in the foregoing clauses (i) and (ii). The registration of shares of our common stock pursuant to the exercise of these registration rights would enable the holders thereof to sell such shares without restriction under the Securities Act of 1933, as amended, or the Securities Act, when the applicable registration statement is declared effective. Under the Investor Rights Agreement, we will pay all expenses relating to such registrations, including the fees of one special counsel for the participating holders, and the holders will pay all underwriting discounts and commissions relating to the sale of their shares. The Investor Rights Agreement also includes customary indemnification and procedural terms.

Holders of 58 shares of our common stock (including shares issuable upon the conversion of our convertible preferred stock) are entitled to such registration rights pursuant to the Investor Rights Agreement. These registration rights will expire on the earlier of (i) the date that is five years after the closing of this offering or (ii) with respect to each stockholder following the closing of this offering, at the earlier of such time at which such stockholder (A) can sell all shares of our common stock held by it pursuant to Rule 144(b)(1)(i) of the Securities Act or (B) holds one percent or less of our outstanding common stock and all registrable securities held by such stockholder can be sold in any three month period without registration in compliance with Section 144 of the Securities Act.

Demand registration rights

At any time beginning 180 days after the closing of this offering, the holders of not less than 60% of the registrable securities then outstanding may request that we prepare, file and maintain a registration statement on Form S-1 to register all or part of their registrable securities if the aggregate offering price of the registrable securities requested to be registered would exceed $15 million. Once we are eligible to use a registration statement on Form S-3, any stockholder party to the Investor Rights Agreement who holds at least 2,000,000 shares of our common stock may, on not more than two occasions in any 12-month period, request that we prepare, file and maintain a registration statement on Form S-3 covering the sale of all or part of their registrable securities, but only if the anticipated offering price of the registrable securities requested to be registered would exceed $5 million.

Piggyback registration rights

In the event that we propose to register any of our securities under the Securities Act, either for our own account or for the account of other security holders, the stockholders party to the Investor Rights Agreement will be entitled to certain "piggyback" registration rights allowing them to include their registrable securities in such registration, subject to certain marketing and other limitations. As a result, whenever we propose to file a registration statement under the Securities Act other than with respect to a demand registration or a registration statement on Form S-4 or S-8, these holders will be entitled to notice of the registration and will have the right to include their registrable securities in the registration subject to certain limitations.

Anti-takeover effects of our certificate of incorporation and our by-laws

Our certificate of incorporation and by-laws will contain certain provisions that are intended to enhance the likelihood of continuity and stability in the composition of our board of directors but which may have the effect of delaying, deferring or preventing a future takeover or change in control of us unless such takeover or change in control is approved by our board of directors.

These provisions include:

Classified board. Our certificate of incorporation will provide that our board of directors will be divided into three classes of directors, with the classes as nearly equal in number as possible. As a result, approximately one-third of our board of directors will be elected each year. The classification of directors will have the effect of making it more difficult for stockholders to change the composition of our board. Our certificate of incorporation will also provide that, subject to any rights of holders of preferred stock to elect additional directors under specified circumstances, the number of directors will be fixed exclusively pursuant to a resolution adopted by our board of directors. Upon completion of this offering, we expect that our board of directors will have members.

Action by written consent; special meetings of stockholders. Our certificate of incorporation will provide that stockholder action can be taken only at an annual or special meeting of stockholders and cannot be taken by written consent in lieu of a meeting. Our certificate of incorporation and the by-laws will also provide that, except as otherwise required by law, special meetings of the stockholders can only be called pursuant to a resolution adopted by a majority of our board of directors. Except as described above, stockholders will not be permitted to call a special meeting or to require our board of directors to call a special meeting.

Removal of directors. Our certificate of incorporation will provide that our directors may be removed only for cause by the affirmative vote of at least 75% of the voting power of our outstanding shares of capital stock, voting together as a single class. This requirement of a supermajority vote to remove directors could enable a minority of our stockholders to prevent a change in the composition of our board.

Advance notice procedures. Our by-laws will establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to the board of directors. Stockholders at an annual meeting will only be able to consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of our board of directors or by a stockholder who was a stockholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has given our Secretary timely written notice, in proper form, of the stockholder's intention to bring that business before the meeting. Although the by-laws will not give our board of directors the power to approve or disapprove stockholder nominations of candidates or proposals regarding other business to be conducted at a special or annual meeting, the by-laws may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed or may discourage or

deter a potential acquirer from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control of us.

Supermajority approval requirements. The DGCL generally provides that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or by-laws, unless either a corporation's certificate of incorporation or by-laws requires a greater percentage. Our certificate of incorporation and by-laws will provide that the affirmative vote of holders of at least 75% of the total votes eligible to be cast in the election of directors will be required to amend, alter, change or repeal specified provisions. This requirement of a supermajority vote to approve amendments to our certificate of incorporation and by-laws could enable a minority of our stockholders to exercise veto power over any such amendments.

Authorized but unissued shares. Our authorized but unissued shares of common stock and preferred stock will be available for future issuance without stockholder approval. These additional shares may be utilized for a variety of corporate purposes, including future public offerings to raise additional capital, corporate acquisitions and employee benefit plans. The existence of authorized but unissued shares of common stock and preferred stock could render more difficult or discourage an attempt to obtain control of a majority of our common stock by means of a proxy contest, tender offer, merger or otherwise.

Exclusive forum. Our certificate of incorporation will require, to the fullest extent permitted by law, that derivative actions brought in the name of the Company, actions against directors, officers and employees for breach of a fiduciary duty and other similar actions may be brought only in specified courts in the State of Delaware. Although we believe this provision benefits us by providing increased consistency in the application of Delaware law in the types of lawsuits to which it applies, the provision may have the effect of discouraging lawsuits against our directors and officers. See "Risk Factors—Our amended and restated certificate of incorporation designates the state or federal courts within the State of Delaware as the exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees."

Section 203 of the DGCL

Upon completion of this offering, we will be subject to the provisions of Section 203 of the DGCL. In general, Section 203 prohibits a publicly-held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. A "business combination" includes, among other things, a merger, asset or stock sale or other transaction resulting in a financial benefit to the interested stockholder. An "interested stockholder" is a person who, together with affiliates and associates, owns, or did own within three years prior to the determination of interested stockholder status, 15% or more of the corporation's voting stock.

Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions: before the stockholder became interested, our board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder; upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances; or at or after the time the stockholder became interested, the business combination was approved by our board of directors of the corporation and authorized at an annual or special meeting of

the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

A Delaware corporation may “opt out” of these provisions with an express provision in its original certificate of incorporation or an express provision in its certificate of incorporation or by-laws resulting from a stockholders’ amendment approved by at least a majority of the outstanding voting shares. We have not opted out of these provisions. As a result, mergers or other takeover or change in control attempts of us may be discouraged or prevented.

Transfer agent and registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A.

Listing

We have applied to have our common stock approved for listing on the Nasdaq Stock Market under the symbol BEAM.

Shares eligible for future sale

Immediately prior to this offering, there was no public market for our common stock, and no predictions can be made about the effect, if any, that market sales of our common stock or the availability of such shares for sale will have on the market price prevailing from time to time. Nevertheless, future sales of our common stock in the public market, or the perception that such sales may occur, could adversely affect the market price of our common stock and could impair our ability to raise capital through future sales of our securities. See “Risk Factors—Risks Related to This Offering and Ownership of Our Common Stock—A significant portion of our total outstanding shares is restricted from immediate resale but may be sold into the market in the near future, which could cause the market price of our common stock to decline significantly, even if our business is doing well.” Furthermore, although we have applied to have our common stock approved for listing on the Nasdaq Stock Market, we cannot assure you that there will be an active public trading market for our common stock.

Upon the closing of this offering, based on the number of shares of our common stock outstanding as of December 31, 2018 and after giving effect to the automatic conversion of all outstanding shares of our convertible preferred stock into 130,616,784 shares of our common stock immediately prior to the closing of this offering, we will have an aggregate of shares of our common stock outstanding (or shares of our common stock if the underwriters exercise in full their option to purchase additional shares). Of these shares of our common stock, all of the shares sold in this offering (or shares if the underwriters exercise in full their option to purchase additional shares) will be freely tradable without restriction or further registration under the Securities Act, except for any shares purchased by our “affiliates,” as that term is defined in Rule 144 under the Securities Act, whose sales would be subject to the Rule 144 resale restrictions described below, other than the holding period requirement.

The remaining 174,863,507 shares of our common stock will be “restricted securities,” as that term is defined in Rule 144 under the Securities Act. These restricted securities are eligible for public sale only if they are registered under the Securities Act or if they qualify for an exemption from registration under Rules 144 or 701 under the Securities Act, which are summarized below. We expect that substantially all of these shares will be subject to the 180-day lock-up period under the lock-up agreements described below. Upon expiration of the lock-up period, we estimate that approximately shares of our common stock will be available for sale in the public market, subject in some cases to applicable volume limitations under Rule 144.

Lock-Up agreements

We and each of our directors and executive officers and holders of substantially all of our outstanding capital stock, who will collectively own shares of our common stock upon the closing of this offering (based on our shares outstanding as of June 30, 2019 and after giving effect to the automatic conversion of all outstanding shares of our convertible preferred stock into shares of our common stock immediately prior to the closing of this offering), have agreed not to sell or transfer any common stock or securities convertible into, exchangeable for, exercisable for, or repayable with common stock, for 180 days after the date of this prospectus without first obtaining the written consent of J.P. Morgan Securities and Jefferies LLC.

Upon the expiration of the lock-up period, substantially all of the shares subject to such lock-up restrictions will become eligible for sale, subject to the limitations discussed above. For a further description of these lock-up agreements, please see “Underwriting.”

Rule 144

Affiliate resales of restricted securities

In general, beginning 90 days after the effective date of the registration statement of which this prospectus is a part, a person who is an affiliate of ours, or who was an affiliate at any time during the 90 days before a sale, who has beneficially owned shares of our common stock for at least six months would be entitled to sell in "broker's transactions" or certain "riskless principal transactions" or to market makers, a number of shares within any three-month period that does not exceed the greater of:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately shares (or shares if the underwriters exercise their option to purchase additional shares in full) of our common stock immediately after this offering; or
- the average weekly trading volume in shares of our common stock on the Nasdaq Stock Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

Affiliate resales under Rule 144 are also subject to the availability of current public information about us. In addition, if the number of shares being sold under Rule 144 by an affiliate during any three-month period exceeds 5,000 shares or has an aggregate sale price in excess of $50,000, the seller must file a notice on Form 144 with the SEC and the Nasdaq Stock Market concurrently with either the placing of a sale order with the broker or the execution directly with a market maker.

Non-affiliate resales of restricted securities

In general, beginning 90 days after the effective date of the registration statement of which this prospectus is a part, a person who is not an affiliate of ours at the time of sale, and has not been an affiliate at any time during the three months preceding a sale, and who has beneficially owned shares of our common stock for at least six months but less than a year, is entitled to sell such shares subject only to the availability of current public information about us. If such person has held our shares for at least one year, such person can resell under Rule 144(b)(1) without regard to any Rule 144 restrictions, including the 90-day public company requirement and the current public information requirement.

Non-affiliate resales are not subject to the manner of sale, volume limitation or notice filing provisions of Rule 144.

Rule 701

In general, under Rule 701, any of an issuer's employees, directors, officers, consultants or advisors who purchases shares from the issuer in connection with a compensatory stock or option plan or other written agreement before the effective date of a registration statement under the Securities Act is entitled to sell such shares 90 days after such effective date in reliance on Rule 144. An affiliate of the issuer can resell shares in reliance on Rule 144 without having to comply with the holding period requirement, and non-affiliates of the issuer can resell shares in reliance on Rule 144 without having to comply with the current public information and holding period requirements.

The SEC has indicated that Rule 701 will apply to typical options granted by an issuer before it becomes subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, along with the shares acquired upon exercise of such options, including exercises after an issuer becomes subject to the reporting requirements of the Exchange Act.

Equity plans

We intend to file one or more registration statements on Form S-8 under the Securities Act to register all shares of our common stock subject to outstanding options and shares of our common stock issued or issuable under our incentive plans. We expect to file the registration statement covering shares offered pursuant to our incentive plans shortly after the date of this prospectus, permitting the resale of such shares by nonaffiliates in the public market without restriction under the Securities Act and the sale by affiliates in the public market, subject to compliance with the resale provisions of Rule 144.

Registration rights

Upon the closing of this offering, the holders of 174,863,507 shares of our common stock (including shares of our common stock issuable upon the conversion of all outstanding shares of our convertible preferred stock) or their transferees will be entitled to various rights with respect to the registration of these shares under the Securities Act. Registration of these shares under the Securities Act would result in these shares becoming fully tradable without restriction under the Securities Act immediately upon the effectiveness of the registration, except for shares purchased by affiliates. See “Description of Capital Stock—Registration Rights” for additional information. Shares covered by a registration statement will be eligible for sale in the public market upon the expiration or release from the terms of the lock-up agreement.

Material U.S. federal income tax consequences to non-U.S. holders of our common stock

The following discussion is a summary of the material U.S. federal income tax consequences to Non-U.S. Holders (as defined below) of the purchase, ownership and disposition of our common stock issued pursuant to this offering, but does not purport to be a complete analysis of all potential tax effects. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local or non-U.S. tax laws are not discussed. This discussion is based on the U.S. Internal Revenue Code of 1986, as amended, or the Code, Treasury Regulations promulgated thereunder, judicial decisions and published rulings and administrative pronouncements of the U.S. Internal Revenue Service, or the IRS, in each case, in effect as of the date hereof. These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a Non-U.S. Holder of our common stock. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position to that discussed below regarding the tax consequences of the purchase, ownership and disposition of our common stock.

This discussion is limited to Non-U.S. Holders that hold our common stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a Non-U.S. Holder's particular circumstances, including the impact of the Medicare contribution tax on net investment income. In addition, it does not address consequences relevant to Non-U.S. Holders subject to special rules, including, without limitation:

- U.S. expatriates and former citizens or long-term residents of the United States;
- persons subject to the alternative minimum tax;
- persons holding our common stock as part of a hedge, straddle or other risk reduction strategy or as part of a conversion transaction or other integrated investment;
- banks, insurance companies and other financial institutions;
- brokers, dealers or traders in securities;
- "controlled foreign corporations," "passive foreign investment companies," and corporations that accumulate earnings to avoid U.S. federal income tax;
- partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);
- tax-exempt organizations or governmental organizations;
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- persons who hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation;
- tax-qualified retirement plans;
- "qualified foreign pension funds" as defined in Section 897(l)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds; and
- persons subject to special tax accounting rules as a result of any item of gross income with respect to our common stock being taken into account in an applicable financial statement.

This discussion does not address the tax treatment of partnerships or other pass-through entities, or persons who hold our common stock through partnerships or other pass-through entities, for U.S. federal income tax purposes. If an entity or arrangement treated as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Accordingly, partnerships holding our common stock and the partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS, AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Definition of a non-U.S. holder

For purposes of this discussion, a “Non-U.S. Holder” is any beneficial owner of our common stock that is neither a “U.S. person” nor an entity or arrangement treated as a partnership for U.S. federal income tax purposes. A U.S. person is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust that (1) is subject to the primary supervision of a U.S. court and the control of one or more “United States persons” (within the meaning of Section 7701(a)(30) of the Code) or (2) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

Distributions

As described in the section entitled “Dividend Policy,” we do not anticipate declaring or paying any distributions to holders of our common stock in the foreseeable future. However, if we do make distributions of cash or property on our common stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a Non-U.S. Holder’s adjusted tax basis in its common stock, but not below zero. Any excess will be treated as capital gain and will be treated as described below under “—Sale or Other Taxable Disposition.”

Subject to the discussion below on effectively connected income, FATCA, and backup withholding, dividends paid to a Non-U.S. Holder of our common stock will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends or such lower rate specified by an applicable income tax treaty, provided the Non-U.S. Holder furnishes a valid IRS Form W-8BEN or W-8BEN-E (or other applicable documentation) certifying qualification for the lower treaty rate. A Non-U.S. Holder that does not timely furnish the required documentation, but that qualifies for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty.

If dividends paid to a Non-U.S. Holder are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such dividends are attributable), the Non-U.S. Holder will be exempt from the U.S. federal withholding tax described above. To claim the exemption, the Non-U.S. Holder must furnish to the applicable withholding agent a valid IRS Form W-8ECI, certifying that the dividends are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States.

Any such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular graduated rates. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on its effectively connected earnings and profits attributable to such dividends, as adjusted for certain items. Non-U.S. Holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

Sale or other taxable disposition

Subject to the discussion below on backup withholding and FATCA, a Non-U.S. Holder will not be subject to U.S. federal income tax on any gain realized upon the sale or other taxable disposition of our common stock unless:

- the gain is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such gain is attributable);
- the Non-U.S. Holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or
- our common stock constitutes a U.S. real property interest, or USRPI, by reason of our status as a U.S. real property holding corporation, or USRPHC, for U.S. federal income tax purposes

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular graduated rates. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on its effectively connected earnings and profits attributable to such gain, as adjusted for certain items.

Gain described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty), but may be offset by certain U.S.-source capital losses (even though the individual is not considered a resident of the United States), provided that the Non-U.S. Holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we currently are not, and we do not anticipate becoming, a USRPHC. Because the determination of whether we are a USRPHC depends on the fair market value of our USRPIs relative to the fair market value of our non-U.S. real property interests and our other business assets, there can be no assurance we are not currently a USRPHC or will not become a USRPHC in the future. Even if we are or were to become a USRPHC, gain arising from the sale or other taxable disposition by a Non-U.S. Holder of our common stock will not be subject to U.S. federal income tax if our common stock is "regularly traded" (as defined by applicable Treasury Regulations) on an established securities market, and such Non-U.S. Holder owned, actually and constructively, 5% or less of our common stock throughout the shorter of the five-year period ending on the date of the sale or other taxable disposition or the Non-U.S. Holder's holding period.

Non-U.S. Holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

Information reporting and backup withholding

Payments of dividends on our common stock will not be subject to backup withholding, provided the holder either certifies its non-U.S. status by furnishing a valid IRS Form W-8BEN, W-8BEN-E or W-8ECI or otherwise establishes an exemption. However, information returns are required to be filed with the IRS in connection with any dividends on our common stock paid to the Non-U.S. Holder, regardless of whether any tax was actually withheld. In addition, proceeds of the sale or other taxable disposition of our common stock within the United States or conducted through certain U.S.-related brokers generally will not be subject to backup withholding or information reporting, if the applicable withholding agent receives the certification described above or the holder otherwise establishes an exemption. Proceeds of a disposition of our common stock conducted through a non-U.S. office of a non-U.S. broker generally will not be subject to backup withholding or information reporting.

Copies of information returns that are filed with the IRS may also be made available under the provisions of an applicable treaty or agreement to the tax authorities of the country in which the Non-U.S. Holder resides or is established.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a Non-U.S. Holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

Additional withholding tax on payments made to foreign accounts

Withholding taxes may be imposed under Sections 1471 to 1474 of the Code and related Treasury Regulations and guidance, or FATCA, on certain types of payments made to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends on our common stock paid to a "foreign financial institution" or a "non-financial foreign entity" (each as defined in the Code), unless (1) the foreign financial institution undertakes certain diligence and reporting obligations, (2) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (3) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in (1) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain "specified United States persons" or "United States-owned foreign entities" (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Under the applicable Treasury Regulations and administrative guidance, withholding under FATCA generally applies to payments of dividends on our common stock. While withholding under FATCA would have also applied to payments of gross proceeds from the sale or other disposition of stock on or after January 1, 2019, recently proposed Treasury Regulations eliminate FATCA withholding on payments of gross proceeds entirely. Taxpayers generally may rely on these proposed Treasury Regulations until final Treasury Regulations are issued.

Prospective investors should consult their tax advisors regarding the potential application of withholding under FATCA to their investment in our common stock.

Underwriting

We are offering the shares of common stock described in this prospectus through a number of underwriters. J.P. Morgan Securities LLC, Jefferies LLC and Barclays Capital Inc. are acting as joint book running managers of the offering and as representatives of the underwriters. We have entered into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters, and each underwriter has severally agreed to purchase, at the initial public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus, the number of shares of common stock listed next to its name in the following table:

Name	Number of shares
J.P. Morgan Securities LLC	
Jefferies LLC	
Barclays Capital Inc.	
Wedbush Securities Inc.	
Total	

The underwriters are committed to purchase all the common shares offered by us if they purchase any shares. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may also be increased or the offering may be terminated.

The underwriters propose to offer the common shares directly to the public at the initial public offering price set forth on the cover page of this prospectus and to certain dealers at that price less a concession not in excess of $ per share. Any such dealers may resell shares to certain other brokers or dealers at a discount of up to $ per share from the initial public offering price. After the initial offering of the shares to the public, if all of the common shares are not sold at the initial public offering price, the underwriters may change the offering price and the other selling terms. Sales of shares made outside of the United States may be made by affiliates of the underwriters.

The underwriters have an option to buy up to additional shares of common stock from us to cover sales of shares by the underwriters which exceed the number of shares specified in the table above. The underwriters have 30 days from the date of this prospectus to exercise this option to purchase additional shares. If any shares are purchased with this option to purchase additional shares, the underwriters will purchase shares in approximately the same proportion as shown in the table above. If any additional shares of common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

The underwriting fee is equal to the public offering price per share of common stock less the amount paid by the underwriters to us per share of common stock. The underwriting fee is $ per share. The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Without option to purchase additional shares exercise	With full option to purchase additional shares exercise
Per Share	$	$
Total	$	$

We estimate that the total expenses of this offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding the underwriting discounts and commissions, will be approximately $. We have also agreed to reimburse the underwriters for certain of their expenses in an amount of up to $.

A prospectus in electronic format may be made available on the web sites maintained by one or more underwriters, or selling group members, if any, participating in the offering. The underwriters may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters and selling group members that may make Internet distributions on the same basis as other allocations.

We have agreed that we will not (i) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise dispose of, directly or indirectly, or file with the Securities and Exchange Commission a registration statement under the Securities Act relating to, any shares of our common stock or securities convertible into or exchangeable or exercisable for any shares of our common stock, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing, or (ii) enter into any swap or other arrangement that transfers all or a portion of the economic consequences associated with the ownership of any shares of common stock or any such other securities (regardless of whether any of these transactions are to be settled by the delivery of shares of common stock or such other securities, in cash or otherwise), in each case without the prior written consent of J.P. Morgan Securities LLC and Jefferies LLC for a period of 180 days after the date of this prospectus, other than the shares of our common stock to be sold hereunder and any shares of our common stock issued upon the exercise of options granted under our existing Company Share Plans.

Our directors and executive officers, and certain of our significant shareholders have entered into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which each of these persons or entities, with limited exceptions, for a period of 180 days after the date of this prospectus, may not, without the prior written consent of J.P. Morgan Securities LLC and Jefferies LLC, (1) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for our common stock (including, without limitation, common stock or such other securities which may be deemed to be beneficially owned by such directors, executive officers, managers and members in accordance with the rules and regulations of the SEC and securities which may be issued upon exercise of a stock option or warrant) or (2) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the common stock or such other securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of common stock or such other securities, in cash or otherwise, or (3) make any demand for or exercise any right with respect to the registration of any shares of our common stock or any security convertible into or exercisable or exchangeable for our common stock.

Notwithstanding the foregoing, the terms of the lock-up agreements generally do not apply to or prohibit, among others, the items described below:

(A) the shares of common stock to be sold pursuant to this offering,

(B) transfers of shares of common stock or any security convertible into or exercisable or exchangeable for common stock as a bona fide gift or gifts or for bona fide estate planning purposes, including without limitation transfers to charitable organizations,

(C) transfers or distributions of shares of common stock or any security convertible into or exercisable or exchangeable for common stock to (a) limited partners, members, stockholders or holders of similar equity

interests or (b) to another corporation, partnership, limited liability company, trust or other business entity that is an affiliate (as defined in Rule 405 promulgated under the Securities Act of 1933, as amended) of the lock-up party, including without limitation any general partner, limited partner, managing member, manager, member, employee, officer or director of such entity or any trust for the benefit of any of the foregoing or any affiliate of the foregoing, or to any investment fund or other entity controlled or managed by the lock-up party or affiliates of such party,

(D) transactions relating to common stock acquired in this offering (other than any issuer-directed shares of common stock purchased in this offering by an officer or director of the company) or open market transactions after the completion of this offering,

(E) transfers or dispositions of common stock or any security convertible into or exercisable or exchangeable for common stock by will or intestacy, provided that any required filing under the Exchange Act, shall clearly indicate in the footnotes thereto that the filing relates to the circumstances described in this clause and no other public filing, report or announcement shall be required or made voluntarily in connection with such transfer or disposition or (ii) to any family member or to a trust whose beneficiaries consist exclusively of one or more of the lock-u party and/or a family member,

(F) transfers of common stock or any security convertible into or exercisable or exchangeable for common stock pursuant to a domestic order or negotiated divorce settlement, provided that any required filing under the Exchange Act shall clearly indicate in the footnotes thereto that the filing relates to the circumstances described in this clause and no other public filing, report or announcement shall be required or made voluntarily in connection with such transfer or disposition,

(G) the exercise of a warrant or the exercise of a stock option granted under a stock incentive plan described in this prospectus, provided that the underlying common stock received shall continue to be subject to the lock-up restrictions, and provided further that no filing under the Exchange Act or other public filing, report or announcement shall be voluntarily made during the period beginning on the date hereof and continuing to and including the date that is 30 days after the date of this prospectus, or the 30-Day Period, and after the 30-Day Period no public filing, report or announcement is voluntarily made, and if the lock-up party is required to make any public filing, report or announcement under the Exchange Act, such public filing, report or announcement shall clearly indicate in the footnotes thereto that the filing relates to the circumstances described in this clause, that no common stock was sold by the reporting person and that common stock so received is subject to the lock-up restrictions,

(H) transfers or dispositions of shares of common stock or other securities to the company in connection with the conversion of any convertible preferred stock into, shares of common stock; provided that any such shares of common stock received shall be subject to the lock-up restrictions, provided further that any required filing of the Exchange Act shall clearly indicate in the footnotes thereto that the filing relates to the circumstances described in this clause and no other public announcement shall be required or shall be made voluntarily in connection with such transfer or disposition,

(I) transfers or dispositions of restricted stock to the company pursuant to any contractual arrangement in effect on the date of this offering and described in this prospectus that provides for the repurchase of the common stock in connection with the termination of services to the company, provided that no filing under the Exchange Act or other public filing, report or announcement shall be voluntarily made during the 30-Day Period, and after the 30-Day Period no public filing, report or announcement is voluntarily made, and if the lock-up party is required to make any public filing, report or announcement under the Exchange Act, such public filing, report or announcement shall clearly indicate in the footnotes thereto that the filing relates to the circumstances described in this clause,

(J) the disposition of common stock to the company, or the withholding of common stock by the company, in a transaction exempt from the Exchange Act solely in connection with the payment of taxes due with respect to the vesting of restricted stock granted under a stock incentive plan or pursuant to a contractual employment arrangement described in this prospectus, insofar as such restricted stock is outstanding as of the date of this prospectus, provided that no filing under the Exchange Act or other public filing, report or announcement shall be voluntarily made during the 30-Day Period, and after the 30-Day Period no public filing, report or announcement is voluntarily made, and if the lock-up party is required to make any public filing, report or announcement under Section 16 of the Exchange Act, such public filing, report or announcement shall clearly indicate in the footnotes thereto that the filing relates to the circumstances described in this clause,

(K) the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of common stock, provided that (a) such plan does not provide for the transfer of common stock during the lock-up period and (b) the entry into such plan is not publicly disclosed, included in any filings under the Exchange Act or otherwise, during the lock-up period, and

(L) pursuant to a bona fide third party tender offer for all outstanding common stock of the company, merger, consolidation or other similar transaction approved by the company's Board of Directors and made to all holders of the company's securities involving a change of control of the company (including, without limitation, the entering into of any lock-up, voting or similar agreement pursuant to which the lock-up party may agree to transfer, sell, tender or otherwise dispose of Common Stock or other such securities in connection with such transaction, or vote any Common Stock or other such securities in favor of any such transaction), provided that in the event that such tender offer, merger, consolidation or other such transaction is not completed, such securities shall remain subject to the lock-up restrictions;

provided that in the case of any transfer or distribution pursuant to clause (B), (C), (E) or (F), each donee or distributee shall be subject to the lock-up restrictions; and provided, further, that in the case of any transfer or distribution pursuant to clause (B), (C), (D) or (E)(ii), no filing by any party (donor, donee, transferor or transferee) under the Exchange Act or other public announcement shall be required or shall be made voluntarily in connection with such transfer or distribution (other than a filing on a Form 5 made after the expiration of the 30-Day Period); and provided, further, in the case of clauses (C) and (E)(ii), any such transfer shall not involve a disposition for value.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act of 1933.

We will apply to have our common stock approved for listing/quotation on The Nasdaq Global Market under the symbol BEAM.

In connection with this offering, the underwriters may engage in stabilizing transactions, which involves making bids for, purchasing and selling shares of common stock in the open market for the purpose of preventing or retarding a decline in the market price of the common stock while this offering is in progress. These stabilizing transactions may include making short sales of the common stock, which involves the sale by the underwriters of a greater number of shares of common stock than they are required to purchase in this offering, and purchasing shares of common stock on the open market to cover positions created by short sales. Short sales may be "covered" shorts, which are short positions in an amount not greater than the underwriters' option to purchase additional shares referred to above, or may be "naked" shorts, which are short positions in excess of that amount. The underwriters may close out any covered short position either by exercising their option to purchase additional shares, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market compared to the price at which the underwriters may purchase shares through the option to

purchase additional shares. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market that could adversely affect investors who purchase in this offering. To the extent that the underwriters create a naked short position, they will purchase shares in the open market to cover the position.

The underwriters have advised us that, pursuant to Regulation M of the Securities Act of 1933, they may also engage in other activities that stabilize, maintain or otherwise affect the price of the common stock, including the imposition of penalty bids. This means that if the representatives of the underwriters purchase common stock in the open market in stabilizing transactions or to cover short sales, the representatives can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them.

These activities may have the effect of raising or maintaining the market price of the common stock or preventing or retarding a decline in the market price of the common stock, and, as a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they may discontinue them at any time. The underwriters may carry out these transactions on The Nasdaq Global Market, in the over-the-counter market or otherwise.

Prior to this offering, there has been no public market for our common stock. The initial public offering price will be determined by negotiations between us and the representatives of the underwriters. In determining the initial public offering price, we and the representatives of the underwriters expect to consider a number of factors including:

- the information set forth in this prospectus and otherwise available to the representatives;
- our prospects and the history and prospects for the industry in which we compete;
- an assessment of our management;
- our prospects for future earnings;
- the general condition of the securities markets at the time of this offering;
- the recent market prices of, and demand for, publicly traded common stock of generally comparable companies; and
- other factors deemed relevant by the underwriters and us.

Neither we nor the underwriters can assure investors that an active trading market will develop for our common shares, or that the shares will trade in the public market at or above the initial public offering price.

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

Certain of the underwriters and their affiliates have provided in the past to us and our affiliates and may provide from time to time in the future certain commercial banking, financial advisory, investment banking and other services for us and such affiliates in the ordinary course of their business, for which they have received

and may continue to receive customary fees and commissions. In addition, from time to time, certain of the underwriters and their affiliates may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans, and may do so in the future.

Notice to prospective investors in the European Economic Area

In relation to each Member State of the European Economic Area (each, a "Relevant Member State"), no offer of shares may be made to the public in that Relevant Member State other than:

A. to any legal entity which is a qualified investor as defined in the Prospectus Regulation;

B. to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Regulation), as permitted under the Prospectus Regulation, subject to obtaining the prior consent of the representatives of the underwriters for any such offer; or

C. in any other circumstances falling within Article 3(1)(4) of the Prospectus Regulation,

provided that no such offer of shares shall require the Company or the representatives to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Directive.

Each person in a Relevant Member State who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed that it is a "qualified investor" within the meaning of Article 2(e) of the Prospectus Regulation. In the case of any shares being offered to a financial intermediary as that term is used in the Prospectus Regulation, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares to the public other than their offer or resale in a Relevant Member State to qualified investors as so defined or in circumstances in which the prior consent of the representatives has been obtained to each such proposed offer or resale.

This prospectus has been prepared on the basis that any offer of shares in any Relevant Member State will be made pursuant to an exemption under the Prospectus Directive from the requirement to publish a prospectus for offers of shares. Accordingly, any person making or intending to make an offer in that Relevant Member State of shares which are the subject of the offering contemplated in this prospectus may only do so in circumstances in which no obligation arises for the Company or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Regulation in relation to such offer. Neither the Company nor the underwriters have authorized, nor do they authorize, the making of any offer of shares in circumstances in which an obligation arises for the Company or the underwriters to publish a prospectus for such offer.

For the purpose of the above provisions, the expression "an offer to the public" in relation to any shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, and the expression "Prospectus Regulation" means Regulation (EU) 2017/1129.

Notice to prospective investors in the United Kingdom

In the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are "qualified investors" (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19 (5) of

the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, or the Order, and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons").

Any person in the United Kingdom that is not a relevant person should not act or rely on the information included in this document or use it as basis for taking any action. In the United Kingdom, any investment or investment activity that this document relates to may be made or taken exclusively by relevant persons. Any person in the United Kingdom that is not a relevant person should not act or rely on this document or any of its contents.

Notice to prospective investors in Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or subsection 73.3(1) of the *Securities Act* (Ontario), and are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 *Underwriting Conflicts* (NI 33-105), the representatives are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Notice to prospective investors in Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document, nor any other offering or marketing material relating to the shares or the offering, may be publicly distributed or otherwise made publicly available in Switzerland. Neither this document nor any other offering or marketing material relating to the offering, the Company, the shares has been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, or FINMA, and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Notice to prospective investors in Hong Kong

The shares may not be offered or sold by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong),

or (ii) to “professional investors” within the meaning of the Securities and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a “prospectus” within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), and no advertisement, invitation or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

Notice to prospective investors in Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 by a relevant person which is: (a) a corporation (which is not an accredited investor) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries’ rights and interest in that trust shall not be transferable for six months after that corporation or that trust has acquired the shares under Section 275 except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA; (2) where no consideration is given for the transfer; or (3) by operation of law.

Notice to prospective investors in Japan

The securities have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (the Financial Instruments and Exchange Law) and each underwriter has agreed that it will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term, as used in this prospectus means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Law and any other applicable laws, regulations and ministerial guidelines of Japan.

Notice to prospective investors in the United Arab Emirates

This prospectus relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority, or DFSA. This prospectus is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus nor taken steps to verify the information set forth herein and has no responsibility for the prospectus. The shares to which this prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus you should consult an authorized financial advisor.

Legal matters

The validity of the shares of common stock offered by this prospectus will be passed upon for us by Ropes & Gray, LLP, Boston, Massachusetts. Certain legal matters will be passed upon for the underwriters by Davis Polk & Wardwell LLP.

Experts

The consolidated financial statements of Beam Therapeutics, Inc. and subsidiary as of December 31, 2018 and 2017, for the year ended December 31, 2018, and for the period from January 25, 2017 (Inception) to December 31, 2017, included in this prospectus, have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report appearing herein. Such consolidated financial statements have been so included in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

Where you can find additional information

We have filed with the SEC a registration statement on Form S-1 under the Securities Act of 1933, as amended, with respect to the shares of common stock offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits and schedules filed therewith. For further information about us and the shares of common stock offered hereby, we refer you to the registration statement and the exhibits and schedules filed thereto. Statements contained in this prospectus regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and each such statement is qualified in all respects by reference to the full text of such contract or other document filed as an exhibit to the registration statement. The SEC also maintains an Internet website that contains reports, proxy statements and other information about registrants, like us, that file electronically with the SEC. The address of that site is *www.sec.gov*.

Upon the effectiveness of the registration statement, we will be subject to the informational requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and, in accordance with the Exchange Act, will file reports, proxy and information statements and other information with the SEC. Such annual, quarterly and special reports, proxy and information statements and other information can be inspected and copied at the locations set forth above. We intend to make this information available on the investor relations section of our website, which is located at *www.beamtx.com*. Information on, or accessible through, our website is not part of this prospectus.

Index to consolidated financial statements

Report of independent registered public accounting firm

To the Stockholders and the Board of Directors of Beam Therapeutics Inc.

Opinion on the financial statements

We have audited the accompanying consolidated balance sheets of Beam Therapeutics Inc. and subsidiary (the “Company”) as of December 31, 2018 and 2017, the related consolidated statements of operations and other comprehensive loss, redeemable convertible preferred stock and stockholders’ deficit, and cash flows, for the year ended December 31, 2018 and for the period from January 25, 2017 (Inception) to December 31, 2017, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for the year ended December 31, 2018 and for the period from January 25, 2017 (Inception) to December 31, 2017, in conformity with accounting principles generally accepted in the United States of America.

Basis for opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Deloitte & Touche LLP

Boston, Massachusetts

July 26, 2019

We have served as the Company’s auditor since 2017.

Beam Therapeutics Inc.
Consolidated balance sheets
(in thousands, except share and per share amounts)

	December 31, 2018	December 31, 2017
Assets		
Current assets:		
Cash and cash equivalents	$ 146,443	$ 1,901
Prepaid expenses and other current assets	1,832	136
Total current assets	148,275	2,037
Property and equipment, net	16,944	335
Restricted cash	1,493	30
Other assets	300	—
Total assets	$ 167,012	$ 2,402
Liabilities, redeemable convertible preferred stock, and stockholders' deficit		
Current liabilities:		
Accounts payable	$ 7,351	$ 726
Financing milestone liabilities payable	13,750	—
Derivative liabilities	2,400	4,700
Accrued expenses	1,734	129
Deferred rent, current portion	352	—
Preferred stock tranche liability	—	1,010
Total current liabilities	25,587	6,565
Deferred rent, net of current portion	7,224	20
Other liabilities	173	—
Total liabilities	32,984	6,585
Commitments and contingencies (See Note 6 and Note 7)		
Redeemable convertible preferred stock (See Note 9)	251,434	5,256
Stockholders' deficit:		
Common stock, $0.01 par value; 190,000,000 and 75,000,000 shares authorized, 43,857,849 and 18,572,727 issued, and 24,956,808 and 2,183,794 outstanding at December 31, 2018 and 2017, respectively	250	22
Additional paid-in capital	7,062	—
Accumulated deficit	(124,718)	(9,461)
Total stockholders' deficit	(117,406)	(9,439)
Total liabilities, redeemable convertible preferred stock, and stockholders' deficit	$ 167,012	$ 2,402

The accompanying notes are an integral part of these consolidated financial statements.

Beam Therapeutics Inc.
Consolidated statements of operations and other comprehensive loss
(in thousands, except share and per share amounts)

	Year ended December 31, 2018	Period from January 25, 2017 (inception) to December 31, 2017
Operating expenses:		
Research and development	$ 33,873	$ 5,859
General and administrative	11,868	2,021
Total operating expenses	45,741	7,880
Loss from operations	(45,741)	(7,880)
Other income (expense):		
Loss on issuance of preferred stock in connection with Blink Merger (see Note 8)	(49,500)	—
Loss on issuance of preferred stock to investors	(5,715)	—
Change in fair value of derivative liabilities	(11,749)	(500)
Change in fair value of preferred stock tranche liabilities	(4,325)	404
Other expense	—	(26)
Interest income	292	—
Total other income (expense)	(70,997)	(122)
Net loss and other comprehensive loss	$ (116,738)	$ (8,002)
Net loss attributable to noncontrolling interest in Blink	1,481	—
Net loss attributable to Beam	$ (115,257)	$ (8,002)
Accretion of redeemable convertible preferred stock to redemption value, including dividends on preferred stock	(2,068)	(1,685)
Net loss attributable to common stockholders	$ (117,325)	$ (9,687)
Net loss per common share attributable to common stockholders, basic and diluted	$ (9.04)	$ (8.36)
Weighted-average common shares used in net loss per share attributable to common stockholders, basic and diluted	12,977,480	1,159,283

The accompanying notes are an integral part of these consolidated financial statements.

Beam Therapeutics Inc.
Consolidated statements of redeemable convertible preferred stock and stockholders' deficit
(in thousands, except share amounts)

	Redeemable Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Noncontrolling Interest	Total Stockholders' Deficit	Redeemable Noncontrolling Interest
	Shares	Amount	Shares	Amount					
Balance at January 25, 2017 (Inception)	—	$ —	—	$ —	$ —	$ —	—	$ —	$ —
Issuance of Series A-1 redeemable convertible preferred stock, net of issuance costs of $66 and derecognition of preferred stock tranche liability of $1,414	5,050,000	3,571	—	—	—	—	—	—	—
Accretion of redeemable convertible preferred stock to redemption value, including dividends on preferred stock	—	1,685	—	—	(226)	(1,459)	—	(1,685)	—
Vesting of restricted common stock	—	—	1,729,249	17	(17)	—	—	—	—
Issuance of common stock	—	—	454,545	5	45	—	—	50	—
Stock-based compensation	—	—	—	—	198	—	—	198	—
Net loss	—	—	—	—	—	(8,002)	—	(8,002)	—
Balance at December 31, 2017	5,050,000	5,256	2,183,794	22	—	(9,461)	—	(9,439)	—
Issuance of Series A-1 redeemable convertible preferred stock, net of issuance costs of $108 and including derecognition of preferred stock tranche liability of $769	21,783,324	22,659	—	—	—	—	—	—	—
Issuance of Series A-2 redeemable convertible preferred stock, net of issuance costs of $57 and including derecognition of preferred stock tranche liability of $4,567	33,604,886	60,467	—	—	—	—	—	—	—
Issuance of Series B redeemable convertible preferred stock, net of issuance costs of $519	28,870,177	96,484	—	—	—	—	—	—	—
Issuance of Blink Series A redeemable convertible preferred stock	—	—	—	—	—	—	—	—	15,000
Issuance of series A-2 redeemable convertible preferred stock in connection with Blink Merger and redemption of redeemable noncontrolling interest	30,000,000	64,500	—	—	—	—	—	—	(15,000)
Issuance of Blink common stock	—	—	—	—	—	—	1,481	1,481	—
Issuance of common stock in connection with Blink Merger	—	—	3,880,000	39	3,453	—	—	3,492	—
Issuance of common stock to scientific founders in connection with Blink Merger	—	—	4,188,934	42	3,728	—	—	3,770	—
Redemption of noncontrolling interest in Blink upon Blink Merger	—	—	—	—	(1,481)	—	—	(1,481)	—
Accretion of redeemable convertible preferred stock to redemption value	—	2,068	—	—	(2,068)	—	—	(2,068)	—
Vesting of restricted common stock	—	—	11,194,543	112	(112)	—	—	—	—
Issuance of common stock related to anti-dilution rights, including derecognition of anti-dilution derivative liability of $300	—	—	3,432,955	34	481	—	—	515	—
Stock-based compensation	—	—	—	—	3,052	—	—	3,052	—
Exercise of common stock options	—	—	76,582	1	9	—	—	10	—
Net loss	—	—	—	—	—	(115,257)	(1,481)	(116,738)	—
Balance at December 31, 2018	119,308,387	$251,434	24,956,808	$ 250	$ 7,062	$ (124,718)	$ —	$ (117,406)	$ —

The accompanying notes are an integral part of these consolidated financial statements.

Beam Therapeutics Inc.
Consolidated statements of cash flows
(in thousands)

	Year ended December 31, 2018	Period from January 25, 2017 (inception) to December 31, 2017
Cash flows from operating activities:		
Net loss	$ (116,738)	$ (8,002)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	650	11
Loss on issuance of preferred stock in connection with Blink Merger (See Note 8)	49,500	—
Loss on issuance of preferred stock to investors	5,715	—
Stock-based compensation	7,002	198
Noncash research and development license expense	7,424	4,250
Change in fair value of derivative liabilities	11,749	500
Change in fair value of preferred stock tranche liabilities	4,325	(404)
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(1,696)	(135)
Accounts payable	2,436	726
Accrued expenses and other liabilities	1,606	129
Deferred rent liability	7,556	20
Other long-term liabilities	173	—
Net cash used in operating activities	(20,298)	(2,707)
Cash flows from investing activities:		
Purchases of property and equipment	(13,124)	(346)
Purchase of long-term investment	(300)	—
Net cash used in investing activities	(13,424)	(346)
Cash flows from financing activities		
Proceeds from issuance of Series A-1 Preferred Stock, net	19,842	4,984
Proceeds from issuance of Series A-2 Preferred Stock, net	48,517	—
Proceeds from issuance of Series B Preferred Stock, net	96,484	—
Proceeds from issuance of Blink Series A Preferred Stock, net	14,874	—
Proceeds from exercise of stock options	10	—
Net cash provided by financing activities	179,727	4,984
Increase in cash, cash equivalents and restricted cash	146,005	1,931
Cash, cash equivalents and restricted cash—beginning of period	1,931	—
Cash, cash equivalents and restricted cash—end of period	$ 147,936	$ 1,931
Supplemental disclosure of noncash investing activities:		
Property and equipment additions included in accounts payable	$ 4,135	—
Supplemental disclosures of noncash financing activities:		
Issuance of common stock in connection with Blink Merger	$ 3,492	—
Issuance of common stock to founders in connection with Blink Merger	$ 3,770	—
Issuance of Series A-2 Preferred Stock in connection with Blink Merger	$ 64,500	—
Issuance of Series A-1 and A-2 Preferred Stock for research and development license	$ 3,716	—
Recognition and derecognition of preferred Stock tranche liabilities	$ 5,335	$ (1,414)
Issuance of common stock for research and development license	$ 515	$ 50
Accretion of redeemable convertible preferred stock to redemption value, including dividends on preferred stock	$ 2,068	$ 1,685

The accompanying notes are an integral part of these consolidated financial statements.

Beam Therapeutics Inc.
Notes to consolidated financial statements

1. Nature of the business and basis of presentation

Organization

Beam Therapeutics Inc. (the “Company” or “Beam”) is a research stage biotechnology company committed to creating a new class of precision genetic medicines, based on our proprietary base editing technology, with a vision of providing life-long cures to patients suffering from serious diseases. The Company was incorporated on January 25, 2017 (Inception) as a Delaware corporation and began operations in July 2017. Its principal offices are in Cambridge, Massachusetts.

Since its inception, the Company has devoted its efforts principally to research and development and raising capital. The Company is subject to risks and uncertainties common to early-stage companies in the biotechnology industry including, but not limited to, technical risks associated with the successful research, development and manufacturing of product candidates, development by competitors of new technological innovations, dependence on key personnel, protection of proprietary technology, compliance with government regulations and the ability to secure additional capital to fund operations. Current and future programs will require significant research and development efforts, including extensive preclinical and clinical testing and regulatory approval prior to commercialization. These efforts require significant amounts of additional capital, adequate personnel and infrastructure. Even if the Company’s drug development efforts are successful, it is uncertain when, if ever, the Company will realize significant revenue from product sales.

Basis of presentation

The accompanying consolidated financial statements have been prepared in accordance with United States generally accepted accounting principles (“GAAP”). Any reference in these notes to applicable guidance is meant to refer to the authoritative GAAP as found in the Accounting Standards Codification (“ASC”) and Accounting Standards Update (“ASU”) of the Financial Accounting Standards Board (“FASB”). The accompanying consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities and commitments in the ordinary course of business. Since its inception, the Company has incurred losses of $116.7 million and $8.0 million for the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017, respectively. As of December 31, 2018, the Company had an accumulated deficit of $124.7 million. To date, the Company has funded its operations with proceeds from the sale of preferred stock. The Company expects to generate operating losses and negative operating cash flows for the foreseeable future.

The Company expects that its cash and cash equivalents as of December 31, 2018 along with $38.0 million in proceeds from its redeemable convertible Series B Preferred Stock (“Series B Preferred”) financing in January and February 2019 will be sufficient to fund its operations for at least the next twelve months from the date of issuance of these financial statements. The Company will need additional financing to support its continuing operations and pursue its growth strategy. Until such time as the Company can generate significant revenue from product sales, if ever, it expects to finance its operations through a combination of equity offerings, debt financings, collaborations, strategic alliances and licensing arrangements. The Company may be unable to raise additional funds or enter into such other agreements when needed on favorable terms or at all. The inability to raise capital as and when needed would have a negative impact on the Company’s financial condition and its ability to pursue its business strategy. The Company will need to generate significant revenue to achieve profitability, and it may never do so.

The Company is seeking to complete an initial public offering ("IPO") of its common stock. Upon the completion of a qualified public offering on specified terms, the Company's outstanding redeemable convertible preferred stock will automatically convert into shares of common stock (see Note 10, Common Stock).

2. Summary of significant accounting policies

Principles of consolidation

The accompanying consolidated financial statements include the accounts of Beam and its wholly owned subsidiary, Blink Therapeutics, which is a Delaware subsidiary that holds certain intellectual property related to RNA base editing. All intercompany transactions and balances have been eliminated in consolidation.

Use of estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities and expenses, and the disclosure of contingent assets and liabilities as of and during the reporting period. The Company bases its estimates and assumptions on historical experience when available and on various factors that it believes to be reasonable under the circumstances. Significant estimates and assumptions reflected in these consolidated financial statements include, but are not limited to, the fair values of common stock, redeemable convertible preferred stock, redeemable convertible preferred stock tranche liabilities, stock-based compensation, financing milestone payments and success payments. Actual results could differ from these estimates.

Cash and cash equivalents

Cash and cash equivalents consist of standard checking accounts and a money market account. The Company considers all highly liquid investments with an original maturity of three months or less at the date of purchase to be cash equivalents.

Restricted cash

As of December 31, 2018, restricted cash represents collateral provided for a letter of credit issued as a security deposit in connection with the Company's lease of its corporate facilities. As of December 31, 2018 and 2017, restricted cash was $1.5 million and $30,000, respectively.

Concentrations of credit risk

Financial instruments that potentially subject the Company to significant concentration of credit risk consist primarily of cash, cash equivalents and restricted cash. Periodically, the Company may maintain deposits in financial institutions in excess of government insured limits. Management believes that the Company is not exposed to significant credit risk as the Company's deposits are held at financial institutions that management believes to be of high credit quality, and the Company has not experienced any losses on these deposits.

Guarantees and indemnifications

As permitted under Delaware law, the Company indemnifies its officers, directors, consultants, and employees for certain events or occurrences that happen by reason of the relationship with, or position held at, the Company. Through December 31, 2018, the Company had not experienced any losses related to these indemnification obligations, and no claims were outstanding. The Company does not expect significant claims related to these indemnification obligations and, consequently, concluded that the fair value of these obligations is negligible, and no related reserves were established.

Deferred offering costs

The Company capitalizes incremental legal, professional accounting and other third-party fees that are directly associated with the planned IPO as other non-current assets until the IPO is consummated. After consummation of the IPO, these costs will be recorded in stockholders' deficit as a reduction of additional paid-in-capital generated as a result of the offering. If the Company terminates its plan for an IPO, any costs deferred will be expensed immediately. As of December 31, 2018, there were no deferred offering costs.

Fair Value of financial instruments

ASC Topic 820, *Fair Value Measurement* ("ASC 820"), establishes a fair value hierarchy for instruments measured at fair value that distinguishes between assumptions based on market data (observable inputs) and the Company's own assumptions (unobservable inputs). Observable inputs are inputs that market participants would use in pricing the asset or liability based on market data obtained from sources independent of the Company. Unobservable inputs are inputs that reflect the Company's assumptions about the inputs that market participants would use in pricing the assets or liability and are developed based on the best information available in the circumstances. ASC 820 identifies fair value as the price that would be received to sell an asset or paid to transfer a liability, in an orderly transaction between market participants at the measurement date. As a basis for considering market participant assumptions in fair value measurements, ASC 820 establishes a three-tiered value hierarchy that distinguishes between the following:

Level 1—Quoted market prices in active markets for identical assets or liabilities.

Level 2—Inputs other than Level 1 inputs that are either directly or indirectly observable, such as quoted market prices, interest rates and yield curves.

Level 3—Unobservable inputs for the asset or liability (i.e. supported by little or no market activity). Level 3 inputs include management's own assumptions about the assumptions that market participants would use in pricing the asset or liability (including assumptions about risk).

To the extent the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair values requires more judgement. Accordingly, the degree of judgement exercised by the Company in determining fair value is greatest for instruments categorized as Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

There have been no changes to the valuation methods utilized by the Company during the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017. The Company evaluates transfers between levels at the end of each reporting period. There were no transfers of financial instruments between levels during the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017.

Property and equipment

Property and equipment are stated at cost less accumulated depreciation. Depreciation expense is recognized using the straight-line method over the estimated useful life of each assets as follows:

Asset category	Estimated useful life
Computer equipment and software	3 years
Laboratory equipment and office furniture	5 years
Leasehold improvements	Shorter of useful life or remaining term

Upon retirement or sale, the cost of assets disposed of and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is included in loss from operations. Expenditures for repairs and maintenance are charged to expense as incurred.

Impairment of long-lived assets

The Company evaluates its long-lived assets, which consist primarily of property and equipment, for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to the future undiscounted net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the asset exceeds the fair value of the asset. There were no impairment losses recognized during the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017.

Freestanding financial instruments and derivatives

The Company has identified the following financial instruments, which are recorded as liabilities in the balance sheet and separately accounted for at fair value.

Preferred Stock Tranche Liabilities—The Company has determined that its obligation to issue, and the Company's investors' right to purchase, additional shares of redeemable convertible Series A-1 Preferred Stock ("Series A-1 Preferred") pursuant to the second closing and redeemable convertible Series A-2 Preferred Stock ("Series A-2 Preferred" and together with the Series A-1 Preferred, the "Series A Preferred") pursuant to the third closing (see Note 9, Redeemable Convertible Preferred Stock) represent a freestanding instrument. The freestanding preferred stock tranche liability (the "tranche liability") was initially recorded at fair value, with gains and losses arising from changes in fair value recognized in other income (expense) in the statement of operations and other comprehensive loss. The tranche liabilities were remeasured at each reporting period and upon the modification, exercise or expiration of the obligation. The liabilities were valued using an option pricing model. In 2018, all Series A-1 Preferred and Series A-2 Preferred closings occurred and all tranche liabilities have been derecognized.

Pursuant to a license agreement with the President and Fellows of Harvard College ("Harvard") ("Harvard License Agreement") and a license agreement with the Broad Institute ("Broad") ("Broad License Agreement") (see Note 7, License Agreements), the following financial instruments were issued by the Company:

Financing Milestone Payments—The Company was required to make future cash payments to Harvard and Broad upon the achievement of future financing milestones tied to the closing of additional rounds of Series A Preferred and Series B Preferred. The financing milestone payments were accounted for under ASC Topic 815, *Derivatives and Hedging* ("ASC 815"), and were initially recorded at fair value with a corresponding charge to research and development expense. The liabilities were marked to market at each balance sheet date with all changes in value recognized in other income (expense) in the statement of operations and other comprehensive loss. The Company adjusted the liability for changes in fair value until the achievement of the financing milestones. To determine the estimated fair value of the financing milestone payments, the Company used a Monte Carlo simulation model, which models the value of the liability based on the change of several key variables, including time to capital raise, probabilities to capital raise, cost of debt, as well as the projected price per share upon issuance. As of December 31, 2018, all financing milestone payments have been achieved and were either paid in cash or are recorded in accrued expenses for actual amounts due. All outstanding financing milestone payment liabilities have been paid in 2019.

Success Payments—The Company is required to make success payments to Harvard and Broad based on increases in the per share fair market value of the Company's Series A Preferred, payable in cash. The success payments are accounted for under ASC 815 and are initially recorded at fair value with a corresponding charge to research and development expense. The liabilities are marked to market at each balance sheet date with all changes in value recognized in other income (expense) in the statement of operations and other comprehensive loss. The Company will continue to adjust the liability for changes in fair value until the earlier of the achievement or expiration of the success payment obligation. To determine the estimated fair value of the success payments, the Company used a Monte Carlo simulation model, which models the value of the liability based on several key variables, including probability of event occurrence, timing of event occurrence, as well as the value of the Series A Preferred.

Anti-Dilution Issuance Rights—Additional shares of common stock were issued to Harvard and Broad upon equity financings allowing Harvard and Broad to maintain a defined ownership percentage in the Company on a fully diluted basis until the Company achieved a defined aggregate level of preferred stock financing. These anti-dilution issuance rights were accounted for under ASC 815 and are initially recorded at fair value with a corresponding charge to research and development expense. As such, the Company recorded this instrument as a liability at its fair value with a corresponding amount recorded as research and development expense and marked it to market at each reporting period, with changes in fair value recognized in other income (expense) in the statement of operations and other comprehensive loss at each period-end while this instrument was outstanding. The liability was valued using a Monte Carlo simulation model, which models the value of the liability based on the change of several key variables, including the time to the capital raise, the probability of the capital raise, as well as the fair value of the Company's common stock. During 2018, the anti-dilution issuance rights were satisfied and there is no additional derivative liability accounting.

Redeemable convertible preferred stock

The Company has classified redeemable convertible preferred stock as temporary equity in the accompanying balance sheets because it becomes redeemable due to the passage of time or could become redeemable due to certain change in control clauses that are outside of the Company's control. As a result of becoming redeemable due to the passage of time, the Company records changes in the redemption value and accretes the redeemable convertible preferred stock immediately to redemption value as they occur. These increases are effected through charges against retained earnings, if any, and then to additional paid-in capital. Then, in the absence of additional paid-in capital, the accretion is charged to the accumulated deficit.

Research and development costs

Research and development costs are charged to expense as incurred. Research and development costs consist of costs incurred in performing research and development activities, including salaries and bonuses, stock-based compensation, employee benefits, facilities costs, laboratory supplies, depreciation, manufacturing expenses, preclinical expenses, consulting and other contracted services. Additionally, under the terms of the Harvard License Agreement and the Broad License Agreement, the Company is obligated to make future payments should certain financing, development and regulatory milestones be achieved. The Company has included such costs as research and development for the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017, as the costs incurred related to the license agreements had no alternative future use. Costs for certain research and development activities are recognized based on the terms of the individual arrangements, which may differ from the pattern of costs incurred, and are reflected in the financial statements as a prepaid or accrued research and development.

Stock-based compensation

The Company's share-based compensation program allows for grants of stock options and restricted stock awards. Grants are awarded to employees and non-employees, including directors.

The Company accounts for its stock-based compensation in accordance with ASC Topic 718, *Compensation-Stock Compensation* (''ASC 718''). ASC 718 requires all share-based payments to employees, non-employees and directors, to be recognized as expense in the consolidated statements of operations and comprehensive loss based on their fair values. The Company estimates the fair value of options granted using the Black-Scholes option pricing model (''Black-Scholes'') for stock option grants to both employees and non-employees. The fair value of the Company's common stock is used to determine the fair value of restricted stock awards.

The Company's stock-based compensation awards are subject to either service or performance-based vesting conditions. Compensation expense related to awards to employees, directors and non-employees with service-based vesting conditions is recognized on a straight-line basis based on the grant date fair value over the associated service period of the award, which is generally the vesting term. Compensation expense related to awards to employees with performance-based vesting conditions is recognized based on grant date fair value over the requisite service period using the accelerated attribution method to the extent achievement of the of performance condition is probable.

The Black-Scholes option pricing model requires inputs based on certain subjective assumptions, including (i) the expected stock price volatility, (ii) the expected term of the award, (iii) the risk-free interest rate and (iv) expected dividends. Due to the lack of a public market for the Company's common stock and lack of company-specific historical and implied volatility data, the Company has based its computation of expected volatility on the historical volatility of a representative group of public companies with similar characteristics to the Company, including stage of product development and life science industry focus. The historical volatility is calculated based on a period of time commensurate with expected term assumption. The Company uses the simplified method as prescribed by the SEC Staff Accounting Bulletin No. 107, *Share-Based Payment*, to calculate the expected term for options granted to employees and non-employees whereby, the expected term equals the arithmetic average of the vesting term and the original contractual term of the options due to its lack of sufficient historical data. The risk-free interest rate is based on U.S. Treasury securities with a maturity date commensurate with the expected term of the associated award. The expected dividend yield is assumed to be zero as the Company has never paid dividends and has no current plans to pay any dividends on its common stock. The Company recognizes forfeitures as they occur.

Prior to the adoption of Compensation—Stock Compensation (Topic 718): *Improvements to Nonemployee Share-Based Payment Accounting* ("ASU 2018-07"), the measurement date for non-employee awards was generally the date the services are completed, resulting in financial reporting period adjustments to stock-based compensation during the vesting terms for changes in the fair value of the awards. After the adoption of ASU 2018-07 on January 1, 2018, the measurement date for non-employee awards is the date of grant without changes in the fair value of the award. The impact of adopting ASU 2018-07 in 2018 was immaterial.

Due to the absence of an active market for the Company's common stock, the Company utilized methodologies in accordance with the framework of the American Institute of Certified Public Accountants Technical Practice Aid, Valuation of Privately-Held Company Equity Securities Issued as Compensation, to estimate the fair value of its common stock. In determining the exercise prices for options granted, the Company has considered the estimated fair value of the common stock as of the measurement date. The estimated fair value of the common stock has been determined at each grant date based upon a variety of factors, including the illiquid nature of the common stock, arm's-length sales of the Company's capital stock (including redeemable convertible preferred stock), the effect of the rights and preferences of the preferred shareholders, and the prospects of a

liquidity event. Among other factors are the Company's financial position and historical financial performance, the status of technological developments within the Company's research, the composition and ability of the current research and management team, an evaluation or benchmark of the Company's competition, and the current business climate in the marketplace. Significant changes to the key assumptions underlying the factors used could result in different fair values of common stock at each valuation date.

Patent costs

All patent-related costs incurred in connection with filing and prosecuting patent applications are expensed as incurred. Due to the uncertainty about the recovery of the expenditure, amounts incurred are classified as general and administrative expenses in the accompanying consolidated statements of operations and other comprehensive loss.

Rent expense

The Company's real estate operating lease provides for scheduled annual rent increases throughout the lease term. The Company recognizes the effects of the scheduled rent increases on a straight-line basis over the full term of the lease. Tenant improvement allowances, if any, provided by a landlord are recorded as deferred rent and amortized as reduction to rent expense over the lease term.

Variable interest entities

The Company reviews each legal entity formed by parties related to the Company to determine whether or not the entity is a Variable Interest Entity ("VIE"). If the entity is a VIE, the Company assesses whether or not it is the primary beneficiary of that VIE based on a number of factors, including (i) which party has the power to direct the activities that most significantly affect the VIE's economic performance, (ii) the parties' contractual rights and responsibilities pursuant to any contractual agreements and (iii) which party has the obligation to absorb losses or the right to receive benefits from the VIE. If the Company determines that it is the primary beneficiary of a VIE, it consolidates the financial statements of the VIE into its consolidated financial statements at the time that determination is made. On a quarterly basis, the Company evaluates whether it continues to be the primary beneficiary of any consolidated VIEs. If the Company determines that it is no longer the primary beneficiary of a consolidated VIE, or no longer has a variable interest in the VIE, the Company deconsolidates the VIE in the period that the determination is made.

Income taxes

The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the Company's financial statements and tax returns. Deferred tax assets and liabilities are determined based upon the differences between the financial statement carrying amounts and the tax bases of existing assets and liabilities and for loss and credit carryforwards, using enacted tax rates expected to be in effect in the year in which the differences are expected to reverse. Deferred tax assets are reduced by a valuation allowance if it is more likely than not that these assets may not be realized. The Company determines whether it is more likely than not that a tax position will be sustained upon examination. If it is not more likely than not that a position will be sustained, none of the benefit attributable to the position is recognized. The tax benefit to be recognized for any tax position that meets the more-likely-than-not recognition threshold is calculated as the largest amount that is more than 50% likely of being realized upon resolution of the contingency. The Company accounts for interest and penalties related to uncertain tax positions as part of its provision for income taxes.

Comprehensive loss

The Company did not have any other comprehensive income or loss for any periods presented and, therefore comprehensive loss did not differ from net loss.

Net loss per share

The Company follows the two-class method when computing net loss per share, as the Company has issued shares that meet the definition of participating securities. The two-class method determines net loss per share for each class of common and participating securities according to dividends declared or accumulated and participation rights in undistributed earnings. The two-class method requires income available to common stockholders for the period to be allocated between common and participating securities based upon their respective rights to receive dividends as if all income for the period had been distributed.

Basic net loss per share attributable to common stockholders is computed by dividing the net loss attributable to common stockholders by the weighted average number of common shares outstanding for the period. Diluted net loss attributable to common stockholders is computed by adjusting net loss attributable to common stockholders to reallocate undistributed earnings based on the potential impact of dilutive securities. Diluted net loss per share attributable to common stockholders is computed by dividing the diluted net loss attributable to common stockholders by the weighted average number of common shares outstanding for the period, including potential dilutive common shares assuming the dilutive effect of common stock equivalents.

The Company's redeemable convertible preferred stock contractually entitles the holders of such shares to participate in dividends but does not contractually require the holders of such shares to participate in losses of the Company. Accordingly, in periods in which the Company reports a net loss, such losses are not allocated to such participating securities. In periods in which the Company reports a net loss attributable to common stockholders, diluted net loss per share attributable to common stockholders is the same as basic net loss per share attributable to common stockholders, since dilutive common shares are not assumed to have been issued if their effect is anti-dilutive. The Company reported a net loss attributable to common stockholders for the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017.

Segment and geographic information

Operating segments are defined as components of an entity about which separate discrete information is available for evaluation by the chief operating decision maker ("CODM"), or decision-making group, in deciding how to allocate resources and in assessing performance. The CODM is the Company's Chief Executive Officer. The Company views its operations as and manages its business in one operating segment operating exclusively in the United States.

Recent accounting pronouncements

The Jumpstart Our Business Startups Act of 2012 permits an emerging growth company to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies until those standards would otherwise apply to private companies. As an emerging growth company, the Company has elected to take advantage of this extended transition period.

In November 2016, the FASB issued ASU No. 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash* (''ASU 2016-18'), which requires that a statement of cash flows explain the change during the period in the total cash, cash equivalents and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included

with cash and cash equivalents when reconciling the beginning and ending balances shown on the statement of cash flows. The Company adopted ASU 2016-18 as of January 1, 2018 utilizing the retrospective transition method and it did not have a material impact on its consolidated statement of cash flows. As part of the adoption of this guidance, the Company included restricted cash with cash and cash equivalents in the consolidated statement of cash flows for the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017.

In February 2016, the FASB issued ASU No. 2016-02, *Leases* ("ASU 2016-02"). The new guidance requires lessees to record most operating leases on their balance sheets and recognize the related expenses on their income statements in a manner similar to current practice. ASU 2016-02 states that a lessee would recognize a lease liability for the obligation to make lease payments and a right-to-use asset for the right to use the underlying asset for the lease term. The standard is effective for the Company for annual reporting periods beginning after December 15, 2019. Early adoption is permitted. In July 2018, an amendment was made that allows companies the option of using the effective date of the new standard as the initial application date (at the beginning of the period in which it is adopted, rather than at the beginning of the earliest comparative period). The standard is effective for the Company on January 1, 2020. The Company plans to use the optional transition method allowed by ASU 2016-02. Under this method, the standard will be applied prospectively in the year of adoption. The Company is assessing the impact the adoption of ASU 2016-02 will have on our consolidated financial statements and will recognize a lease obligation and right of use asset for our existing leases upon adoption.

3. Property and equipment, net

Property and equipment consist of the following (in thousands):

	December 31,	
	2018	**2017**
Leasehold improvements	$10,262	$166
Lab equipment	6,313	180
Furniture and fixtures	575	—
Computer equipment	455	—
Total property and equipment	17,605	346
Less accumulated depreciation	(661)	(11)
Property and equipment, net	$16,944	$335

Depreciation expense for the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017, was $650,000 and $11,000, respectively.

4. Fair Value of financial instruments

The Company's financial instruments consist of money market funds, the tranche liabilities as well as anti-dilution issuance rights liabilities, financial milestone payments liabilities, and success payment derivative liabilities pursuant to the Harvard License Agreement and the Broad License Agreement. The tranche liabilities are considered a freestanding instrument that imposes an obligation on the Company to issue shares that are potentially redeemable, resulting in liability classification under ASC 480, *Distinguishing Liabilities from Equity*. The anti-dilution issuance rights, financial milestone payments and success payments meet the definition of a derivative under ASC 815. The liabilities are carried at fair value.

The following tables set forth the fair value of the Company's financial assets and liabilities by level within the fair value hierarchy (in thousands):

	As of December 31, 2018				
	Carrying amount	Fair value	Quoted prices in active markets (level 1)	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)
Assets					
Money market funds	$ 80,093	$80,093	$ 80,093	$ —	$ —
Total assets	$ 80,093	$80,093	$ 80,093	$ —	$ —
Liabilities					
Success payment liabilities	$ 2,400	$ 2,400	$ —	$ —	$ 2,400
Total liabilities	$ 2,400	$ 2,400	$ —	$ —	$ 2,400

	As of December 31, 2017				
	Carrying amount	Fair value	Quoted prices in active markets (level 1)	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)
Liabilities					
Preferred stock tranche liability	$ 1,010	$1,010	$ —	$ —	$ 1,010
Anti-dilution issuance right liability	300	300	—	—	300
Financial milestone payment liabilities	3,500	3,500	—	—	3,500
Success payment liability	900	900	—	—	900
Total liabilities	$ 5,710	$5,710	$ —	$ —	$ 5,710

Cash Equivalents—Cash equivalents of $80.1 million as of December 31, 2018 consisted of money market funds and are classified within Level 1 of the fair value hierarchy because they are valued using quoted market prices in active markets.

Tranche Liabilities—The tranche liabilities are stated at fair value and are considered Level 3 because their fair value measurement is based, in part, on significant inputs not observed in the market. The Company determined the fair value of tranche liabilities as described in Note 9. In 2018, all tranche liabilities have been satisfied in connection with the issuance of the Series A-1 Preferred and Series A-2 Preferred Stock during 2018.

Anti-Dilution Issuance Right Liability— Under the provisions of the respective license agreements, additional shares of common stock were issued to Harvard and Broad upon equity financings allowing Harvard and Broad to maintain a defined ownership percentage in the Company on a fully diluted basis until the Company achieved a defined aggregate level of preferred stock financing (see Note 7, License Agreements). To determine the estimated fair value of the anti-dilution issuance right liabilities, the Company used a Monte Carlo simulation methodology, which models the future movement of stock prices based on several key variables. At issuance and as of December 31, 2017, the estimated fair value of the Harvard anti-dilution issuance right was $0.3 million. At issuance in 2018, the estimated fair value of the Broad anti-dilution issuance right was $0.1 million, which was recorded as research and development expense. Upon satisfaction of the Broad and Harvard anti-dilution issuance rights in 2018, the Company remeasured the liabilities at fair value with the corresponding charge of $1.3 million recorded to other expense and derecognized the liability. During 2018, anti-dilution issuance rights to Harvard and Broad were satisfied and there is no additional derivative liability accounting.

The primary inputs used in valuing the Harvard anti-dilution issuance right liability at inception and upon remeasurement at December 31, 2017, were as follows:

	At December 31, 2017	At inception in 2017
Fair value of common stock (per share)	$ 0.11	$ 0.11
Estimated additional shares of common stock	2,929,291–2,955,000	2,863,636–2,954,545
Expected volatility	75%	75%
Expected term (years)	0.25–0.67	0.67–1.75

The primary inputs used in valuing the Broad anti-dilution issuance right liability at inception were as follows:

	At inception in 2018
Fair value of common stock (per share)	$ 0.09
Estimated additional shares of common stock	1,380,000
Expected term (in years)	0.32

The fair value of the common stock was determined by management with the assistance of an independent third-party specialist. The computation of expected volatility was estimated using available information about the historical volatility of stocks of similar publicly traded companies for a period matching the expected term assumption. In addition, the Company incorporated the estimated number shares, timing, and probability of future equity financings in the calculation of the anti-dilution liability. During 2018, the shares issuable under the Harvard anti-dilution issuance rights were determined upon the closing of the specified preferred stock financing milestones. Also, during 2018, the shares issuable under the Broad anti-dilution issuance rights were determined upon the closing of the Blink Merger (see Note 8, Blink Therapeutics). The Company re-measured the fair value of the anti-dilution rights based upon the actual shares of common stock issued to Harvard and Broad and the estimated fair value of the related common stock (Level 3) at the date of issuance.

Financing Milestone Payment Liabilities—The Company is also required to make future cash payments to Harvard and Broad, under the respective license agreements, upon the achievement of future financing milestones tied to the closing of additional rounds of Series A Preferred and Series B Preferred financing (see Note 7, License Agreements). To determine the estimated fair value of the financing milestone payment liabilities, the Company used a Monte Carlo simulation methodology, which models the future payment obligations based on several key variables.

Harvard

The fair value of the Series A Preferred financing milestone payment at inception was estimated at $2.4 million. In 2017, the Company paid $500,000 for the achievement of one of the financing milestone targets. The liability was remeasured to fair value at December 31, 2017, resulting in a fair value $2.1 million. The key inputs to the valuation model include the following:

	At December 31, 2017	At inception in 2017
Potential payment obligation (in thousands)	$ 2,500	$ 3,000
Expected volatility	75%	75%
Expected term (years)	0.25–0.67	0.67-1.75

The computation of expected volatility was estimated using available information about the historical volatility of stocks of similar publicly traded companies for a period matching the expected term assumption. In addition,

the Company incorporated the estimated timing and probability of raising additional Series A Preferred financing. In 2018, the Company achieved the Series A Preferred financing milestones and paid Harvard $2.5 million for the remainder of the $3.0 million Series A Preferred financing milestone obligation.

Upon each closing of the sale by the Company of shares of Series B Preferred, the Company was required to pay Harvard a milestone payment of up to $6.0 million that is determined based upon a defined formula in the Harvard License Agreement and is dependent upon the issuance price, shares and proceeds from Series B Preferred raised, among other factors. The fair value of the Series B Preferred financing milestone liability at inception was estimated at $1.2 million and was remeasured at December 31, 2017, resulting in a fair value of $1.4 million. The key inputs to the valuation model include the following:

	At December 31, 2017	At inception in 2017
Projected fair value of Series A Preferred (per share)	$ 2.00	$ 2.00
Expected volatility	75%	75%
Expected term (years)	2.25	2.76

The fair value of the Series A Preferred was determined by management with the assistance of an independent third-party specialist and is used in the valuation model to estimate the fair value of the future issuance price of Series B Preferred. The computation of expected volatility was estimated using available information about the historical volatility of stocks of similar publicly traded companies for a period matching the expected term assumption. In addition, the Company incorporated the estimated timing and probability of raising additional Series B Preferred financing. In 2018, the Company achieved the Series B Preferred financing milestone and recorded the liability at the actual amount due of $6.0 million, which is included in the financing milestone liabilities payable in the consolidated balance sheets. In January 2019, the Company settled the liability in cash.

Broad

The fair value of the Series A Preferred financing milestone payment at inception in May 2018 was estimated at $2.9 million. The key Level 3 valuation inputs used to value the Series A financing milestone liability at inception, were the estimated probability of achieving the Series A Preferred financing of 85% and the expected term of 0.25 to 0.5 years. In September 2018, the Company achieved the Series A financing milestones and recorded the liability for the full $3.0 million due. As of December 31, 2018, $1.8 million is included in financing milestone liabilities payable in the consolidated balance sheets. In May 2019, the Company settled the liability in cash.

Upon each closing of the sale by the Company of shares of Series B Preferred, the Company was required to pay Broad a milestone payment of up to $6.0 million that is determined based upon a defined formula in the Broad License Agreement and is dependent upon the issuance price, shares and proceeds from Series B Preferred raised, among other factors. The fair value of the Series B Preferred financing milestone liability at inception was estimated at $1.4 million. The key inputs to the valuation model include the following:

	At inception
Fair value of Series A Preferred (per share)	$ 1.00
Expected volatility	78%
Expected term (years)	0.65

The fair value of the Series A Preferred was determined by management with the assistance of an independent third-party specialist and is used in the valuation model to estimate the fair value of the future issuance price of

Series B Preferred. The computation of expected volatility was estimated using available information about the historical volatility of stocks of similar publicly traded companies for a period matching the expected term assumption. In addition, the Company incorporated the estimated timing and probability of raising additional Series B Preferred financing. In 2018, the Company achieved the Series B Preferred financing milestones and recorded the liability at the actual amount due of $6.0 million, which is included in the financing milestones liability payable in the consolidated balance sheets. In January 2019, the Company settled the liability in cash.

Success Payment Liability—The Company is required to make payments to Harvard and Broad based upon increases in the per share fair market value of the Company's Series A Preferred at specified future dates, which is further discussed in Note 7. The Company's liability for the share-based success payments under the Harvard and Broad License Agreements are carried at fair value. To determine the estimated fair value of the success payment liability, the Company uses a Monte Carlo simulation methodology, which models the future movement of stock prices based on several key variables.

The following variables were incorporated in the calculation of the estimated fair value of the Harvard success payment liability at December 31, 2018.

	At December 31, 2018
Fair value of Series A Preferred (per share)	$ 2.34
Expected volatility	73%
Expected term (years)	1.20–9.00

The following variables were incorporated in the calculation of the estimated projected fair value of the Harvard success payment liability at December 31, 2017 and the inception of the arrangement.

	At December 31, 2017	At inception in 2017
Projected fair value of Series A Preferred (per share)	$ 2.00	$ 2.00
Expected volatility	75%	75%
Expected term (years)	3.00–10.00	3.51-10.51

The fair value of the Harvard success payment liability at December 31, 2018, December 31, 2017 and at inception in 2017 was $1.2 million, $0.9 million and $0.8 million, respectively.

The following variables were incorporated in the calculation of the estimated fair value of the Broad success payment liability at December 31, 2018 and the inception of the arrangement:

	At December 31, 2018	At inception in 2018
Fair value of Series A Preferred (per share)	$ 2.34	$ 1.00
Expected volatility	73%	78%
Expected term (years)	1.20–9.00	2.50-9.65

The fair value of the Broad success payment liability at December 31, 2018 and at inception in 2018 was $1.2 million and $0.8 million, respectively.

The fair value of the Series A Preferred was by management with the assistance of an independent third-party specialist. The computation of expected volatility was estimated using available information about the historical volatility of stocks of similar publicly traded companies for a period matching the expected term assumption. In

addition, the Company incorporated the estimated number, timing, and probability of valuation measurement dates in the calculation of the success payment liability.

The reconciliations of changes in the fair value of financial instruments based on Level 3 inputs for year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017 were as follows (in thousands):

	Tranche liabilities	Anti-dilution issuance right liability	Financial milestone payment liabilities	Success payment liability	Total
Balance at January 25, 2017 (Inception)	$ —	$ —	$ —	$ —	$ —
Fair value at issuance	1,414	300	3,600	800	6,114
Payments	—	—	(500)	—	(500)
Changes in fair value	(404)	—	400	100	96
Balance at December 31, 2017	1,010	300	3,500	900	5,710
Fair value at issuance	—	70	4,300	800	5,170
Issuance of Series A Preferred	(5,335)	—	—	—	(5,335)
Issuance of common stock	—	(1,719)	—	—	(1,719)
Payments	—	—	(3,750)	—	(3,750)
Reclassification to financing milestone liabilities payable	—	—	(13,750)	—	(13,750)
Change in fair value	4,325	1,349	9,700	700	16,074
Balance at December 31, 2018	$ —	$ —	$ —	$ 2,400	$ 2,400

5. Accrued expenses

Accrued expenses consist of the following (in thousands):

	December 31,	
	2018	2017
Employee compensation and related benefits	$ 954	$ 30
Professional fees	673	99
Other	107	—
Total	$ 1,734	$ 129

6. Commitments

Operating leases

In August 2017, the Company entered into an operating lease for office and laboratory space in Cambridge, Massachusetts that expired in April 2018.

In 2018, the Company signed a noncancelable lease for 38,203 square feet of office and laboratory space in Cambridge, Massachusetts. The lease commenced in March 2018 and has a 10.6 year term. The Company has an option to extend the lease for one five-year term. The lease is subject to fixed rate escalation increases and the landlord waived the Company's rent obligation for the first seven months of the lease, having an initial value of $1.7 million. The landlord also agreed to fund up to $6.1 million in tenant improvements. The Company recorded the tenant improvements as leasehold improvements and deferred rent on the consolidated balance sheet.

Deferred rent is amortized as a reduction in rent expense over the term of the lease. The Company recognizes rent expense on a straight-line basis over the expected lease term. The Company began to record rent expense in March 2018 upon gaining access to and control of the space. Upon execution of lease, the Company provided a letter of credit issued as a security deposit of approximately $1.5 million. The Company has recorded cash held to secure this letter of credit as restricted cash in the accompanying balance sheet as of December 31, 2018. The Company has other immaterial noncancelable operating leases for equipment and laboratory space, which have remaining lease terms between 1 and 3 years at December 31, 2018.

Future minimum lease payments for the Company's facility and other immaterial operating leases are as follows (in thousands):

Years ending December 31,	Amount
2019	$ 3,699
2020	3,954
2021	3,413
2022	3,281
2023	3,379
Thereafter	17,476
Total future minimum lease payments	$ 35,202

Rent expense for the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017, was $3.1 million and $0.2 million, respectively.

7. License agreements

Harvard license agreement

In June 2017, the Company entered into a license agreement with Harvard for certain base editing technology pursuant to which the Company received an exclusive, worldwide, sublicensable, royalty-bearing license under specified patent rights to develop and commercialize licensed products and a nonexclusive, worldwide, sublicensable, royalty-bearing license under certain patent rights to research and develop licensed products. The Company agreed to use commercially reasonable efforts to develop licensed products in accordance with the development plan, to introduce any licensed products that gain regulatory approval into the commercial market, to market licensed products that have gained regulatory approval following such introduction into the market, and to make licensed products that have gained regulatory approval reasonably available to the public. The license term extends until the later of the expiration of (i) the last to expire licensed patent covering a licensed product, (ii) the period of exclusivity associated with a licensed product or (iii) a certain period after the first commercial sale of a licensed product, unless terminated earlier by either party under certain provisions.

As partial consideration for the rights granted under the Harvard License Agreement, the Company issued to Harvard 454,545 shares of the Company's common stock. Additional consideration under the Harvard License Agreement is as follows:

Anti-Dilution Issuance Right—The initial consideration for the license included shares of common stock, with a fair value of $50,000, subject to anti-dilution provisions until the achievement by the Company of a specified level of equity financing and recorded the cost in research and development expense. In 2018, the equity financing was achieved and the Company issued 3,432,955 shares of common stock to Harvard under the anti-dilution provision with a fair value of $0.5 million and recorded other expense of $0.2 million for the remeasurement of the liability upon issuance of the shares.

Financing Milestone Payments—Financing milestone payments are due to Harvard based on the size of additional rounds of financing, including the sales of Series A and Series B Preferred. To the extent the Company raises a minimum of $5.0 million of Series A Preferred and a maximum of $50.0 million of Series A Preferred, the Company is obligated to pay Harvard between $0.5 million and $3.0 million depending upon the total level of Series A Preferred issued. At inception, the Company recorded $2.4 million of research and development expense related to these payments. In the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017, the Company recorded other expense of $0.4 million and $0.2 million for the remeasurement of the liability. In the period from January 25, 2017 (Inception) to December 31, 2017, the Company paid Harvard $0.5 million for the achievement of the first financing milestone and in 2018 paid Harvard the remaining $2.5 million upon achieving the remaining financing.

The Company is also obligated to pay Harvard a milestone payment of up to $6.0 million that is determined based upon a defined formula in the Harvard License Agreement and is dependent upon the issuance price, shares, and proceeds from Series B Preferred raised, among other factors. At inception, the Company recorded $1.2 million of research and development expense related to these payments. In the period from January 25, 2017 (Inception) to December 31, 2017, the Company recorded $0.2 million for the remeasurement of the liability. In 2018, the Company achieved the Series B Preferred financing milestone and recorded the liability at the actual amount due of $6.0 million, which is included in the financing milestone liabilities payable in the consolidated balance sheets and recorded $4.6 million of other expense related to the remeasurement of the liability. In January 2019, the Company settled the liability in cash.

Success Payments—Under the Harvard License Agreement, Harvard is entitled to receive success payments, in cash, determined based upon the achievement of specified multiples of the initial weighted average value of the Company's Series A Preferred at specified valuation dates. The success payments range from $5.0 million to a maximum of $105.0 million, and have valuation multiples that range from 5 times to 40 times the initial weighted average value of the Series A Preferred. The Company shall make success payments to Harvard during a period of time ("Success Payment Period"), which has been determined to be the later of (1) the ninth anniversary of the Harvard License Agreement or (2) the earlier of (a) the 12th anniversary of the Harvard License Agreement and (b) the third anniversary of the first date on which a licensed product receives regulatory approval in the United States. In the period from January 25, 2017 (Inception) to December 31, 2017, the Company recorded research and development expense of $0.8 million related to these payments. In year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017, the Company recorded $0.3 million and $0.1 million, respectively, of other expense related to the remeasurement of the liability. As of December 31, 2018, the Company has recorded $1.2 million for the estimated fair value of the success fee derivative liability. As of and for the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017, no success payments were paid or due.

Other Payments—The Company agreed to pay Harvard an annual license maintenance fee ranging from low-to-mid five figures to low six figures, depending on the particular calendar year. The Company is responsible for the payment of certain patent prosecution and maintenance costs incurred by Harvard related to licensed patents. To the extent achieved, the Company is obligated to pay up to an aggregate of $75.9 million in product development and regulatory approval milestones ("Harvard Product Milestones"). If the Company completes a change of control during the term of the Harvard License Agreement, then the certain of the milestone payments would be increased. To the extent there are sales of a licensed product, the Company is required to pay low single digit royalties on net sales. The Company is entitled to certain reductions and offsets on these royalties with respect to a licensed product in a given country. If the Company sublicenses its rights to develop or commercialize a licensed product under the Harvard License Agreement to a third party and the Company receives non-royalty sublicense income, then Harvard is entitled to a percentage of such

consideration, ranging from the high single digits to low double digits depending on the date in which such sublicense agreement is executed and the stage of development of the Company's licensed products at such time.

The Company concluded that the assets acquired from Harvard did not meet the accounting definition of a business as inputs, but no processes or outputs were acquired with the license. As the inputs that were acquired along with the license do not constitute a "business," the transaction has been accounted for as an asset acquisition. As of the date of the Harvard License Agreement, the assets acquired had no alternative future use and the assets had not reached a stage of technological feasibility. As a result, all share-based and cash payment obligations have been recorded as research and development expense in the statement of operations and other comprehensive loss.

At the inception of the Harvard License Agreement in 2017, the Company recognized $4.8 million as research and development expense which includes the fair value of the common stock issued to Harvard, along with the initial fair values of the anti-dilution issuance right, financing milestone payments, and success payments. The anti-dilution issuance right, financing milestone payments, and success payments are remeasured at fair value each reporting period with subsequent changes recognized in other income (expense). For the year ended December 31, 2018 and for the period from January 25, 2017 (Inception), the Company recorded $5.5 million and $0.5 million, respectively, in other expense for changes in the value of the derivative liabilities. The annual maintenance fees will be recorded as an expense on an annual basis based on the stated amount for the applicable year. Annual patent costs will be expensed as incurred. Upon determination that a Harvard Product Milestone is probable to occur, the amount due will be recorded as research and development expense. The Company will monitor the Harvard Product Milestone payments for this arrangement on an ongoing basis. The achievement of these milestone payments was not considered probable as of the acquisition date, and no expense has been recorded for these milestones in year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017. Lastly, to the extent products are commercialized under the Harvard License Agreement, the Company will accrue royalty expense and sublicense nonroyalty payments, as applicable, for the amount it is obligated to pay, with adjustments as sales are made.

Broad license agreement

In May 2018, Blink, Beam's subsidiary, entered into a license agreement with Broad for certain RNA base editing technology including an RNA editor platforms. As discussed in Note 8, on the same date that Blink entered into the Broad License Agreement, the Company entered into an option agreement to merge with Blink. The Company has consolidated the operations of Blink from May 2018 and through the merger of Blink with Beam in September 2018. The initial Broad License Agreement contemplated the eventual merger of Blink with Beam and the terms and conditions of the Broad License Agreement have been retained by Blink.

Under the Broad License Agreement, Broad granted Blink exclusive and non-exclusive worldwide, sublicensable, royalty-bearing licenses under specified patent rights to develop and commercialize licensed product and a nonexclusive, worldwide, sublicensable, royalty-bearing license under certain patent rights to research and develop licensed products. Blink agreed to use commercially reasonable efforts to develop licensed products in accordance with the development plan, to introduce any licensed products that gain regulatory approval into the commercial market, to market licensed products that have gained regulatory approval following such introduction into the market, and to make licensed products that have gained regulatory approval reasonably available to the public. The license term extends until the later of the expiration of (i) the last to expire licensed

patent covering a licensed product, (ii) the period of regulatory exclusivity associated with a licensed product or (iii) a certain period after the first commercial sale of a licensed product unless terminated earlier by either party under certain provisions.

As partial consideration for the rights granted under the Broad License Agreement, Broad received 1,020,000 shares of Blink's common stock. These shares issued to Broad were exchanged into 2,040,000 shares of common stock of Beam in connection with the Blink Merger in September 2018, along with additional shares issued to Broad under the anti-dilution issuance right discussed below. Additional consideration under the Broad License Agreement is as follows:

Anti-Dilution Issuance Right—The initial consideration in exchange for the license included 1,020,000 shares of Blink common stock, with a fair value of $0.1 million, subject to anti-dilution provisions until the achievement of a specified level of equity financing in Blink or a merger of Blink with Beam. At inception, the Company recorded $0.1 million of research and development expense related to these anti-dilution rights. In 2018, upon the closing of additional Blink Series A Preferred financing, Blink issued Broad an additional 920,000 shares of Blink common stock having a fair value of $1.2 million and recorded $1.1 million of other expense related to the remeasurement of the liability. Upon the Blink Merger, Beam issued Broad 3,880,000 shares of common stock in exchange for 1,940,000 shares of Blink common stock and recorded research and development expense of $2.2 million (see Note 8, Blink Therapeutics).

Financing Milestone Payments—Financing milestone payments are due Broad based on the size of additional rounds of Blink Series A Preferred and Series B Preferred or upon the merger of Blink with Beam. To the extent Blink raises a minimum of $5.0 million of Series A Preferred and a maximum of $50.0 million of Series A Preferred, the Company is obligated to pay Broad between $0.5 million and $3.0 million depending upon the total level of Series A Preferred issued. Pursuant to the Broad License Agreement, if the Blink Merger occurred prior to the achievement of any Series A Preferred financing milestone events, then all the unpaid Series A Preferred financing milestone payments would be due to Broad. At inception, the Company recorded $2.9 million of research and development expense related to these payments. As described in Note 8, Blink raised $15.0 million of from the issuance of series A Preferred and upon the Blink Merger in September 2018 the full $3.0 million Series A financing milestone was due Broad. As of December 31, 2018, the Company had recorded $0.1 million of other expense related to the remeasurement of the liability and had accrued $1.8 million for the remaining unpaid financing milestone liability.

Under the Broad License Agreement, Blink was obligated to pay Broad a milestone payment of up to $6.0 million determined based upon a defined formula in the Broad License Agreement and was dependent upon the issuance price, shares, and proceeds from Series B Preferred raised, among other factors. At inception, the Company recorded $1.4 million of research and development expense related to this payment. Additionally, following the Blink Merger, Blink remained responsible for the Series B Preferred milestone payments based on proceeds received from a Beam issuance of Series B Preferred, up until aggregate payments of $6.0 million are made to Broad. In 2018, the Company achieved the Series B Preferred financing milestones and recorded the liability at the actual amount due of $6.0 million, which is included in the financing milestones liability payable in the consolidated balance sheets. In 2018, the Company recorded $4.6 million of other expense related to the remeasurement of the liability. In 2019, the Company settled the liability in cash.

Success Payments—Under the Broad License Agreement, Broad is entitled to receive success payments, in cash, determined based upon the achievement of specified multiples of the initial weighted average value of the Blink Series A Preferred at specified valuation dates. As contemplated in the original Broad License Agreement, the success payment obligation is retained by Beam upon completion of the Blink Merger. The success payments range from $5.0 million to a maximum of $105.0 million, and have valuation multiples that range from 5 times to 40 times the initial weighted average value of the Blink Series A Preferred. The Company is required to make success payments to

Broad during a period of time (“Broad Success Payment Period”), which has been determined to be the earliest of (1) the twelfth anniversary of the Broad License Agreement or (2) the third anniversary of the first date on which a licensed product receives regulatory approval in the United States. During the Broad Success Payment Period, the Company will perform a valuation on specified dates (“Valuation Date”), as defined in the agreement. At inception, the Company recorded $0.8 million of research and development expense related to these payments. In 2018, the Company recorded $0.4 million of other expense related to the remeasurement of this liability. As of December 31, 2018, the Company has recorded $1.2 million for the estimated fair value of a success fee derivative liability. As of and for the period ended December 31, 2018, no success payments were paid or payable to Broad.

Other Payments—The Company agreed to pay Broad an annual license maintenance fee ranging from low-to-mid five figures to low six figures, depending on the particular calendar year. The Company is responsible for the payment of certain patent prosecution and maintenance costs incurred by Broad related to licensed patents. To the extent achieved, the Company is obligated to pay up to an aggregate of $75.9 million in product development and regulatory approval milestones (“Broad Product Milestones”). Excluding the Blink merger, if the Company completes a change of control during the term of the Broad License Agreement, then certain of the milestone payments would be increased. To the extent there are commercial sales of a licensed product, the Company is required to pay low single digit royalties on net sales. the Company is entitled to certain reductions and offsets on these royalties with respect to a licensed product in a given country. If the Company sublicenses its rights to develop or commercialize a licensed product under the Broad License Agreement to a third party and the Company receives non-royalty sublicense income, then Broad is entitled to a percentage of such consideration, ranging from the high single digits to low double digits depending on the date in which such sublicense agreement is executed and the stage of development of the Company’s licensed products at such time.

The Company concluded that the assets acquired from Broad did not meet the accounting definition of a business as inputs, but no processes or outputs were acquired with the license. As the inputs that were acquired along with the license do not constitute a “business,” the transaction has been accounted for as an asset acquisition. As of the date of the Broad License Agreement, the assets acquired had no alternative future use and the assets had not reached a stage of technological feasibility. As a result, all share-based and cash payment obligations have been recorded as research and development expense in the statement of operations and other comprehensive loss.

At inception of the agreement, the Company recognized approximately $5.3 million as research and development expense which includes the fair value of Blink common stock issued to Broad, along with the initial fair values of the anti-dilution issuance right, financing milestone payments (including the achievement of the first Series A financing milestone payment), and success payments. The anti-dilution issuance right, financing milestone payments, and success payments are remeasured at fair value at each reporting period with subsequent changes recognized in other income (expense). For the year ended December 31, 2018, the Company recorded $6.2 million in other expense for changes in the value of the derivative liabilities. The annual maintenance fees will be recorded as an expense on an annual basis based on the stated amount for the applicable year. Annual patent costs will be expensed as incurred. Upon determination that a Product Milestone is probable to occur, the amount due will be recorded as research and development expense. The Company will monitor the Product Milestone payments for this arrangement on an ongoing basis. The triggering of these milestone payments was not considered probable as of the acquisition date, and no expense has been recorded for these milestones as of December 31, 2018. Lastly, to the extent products are commercialized under the Broad License Agreement, the Company will accrue royalty expense and sublicense nonroyalty payments, as applicable, for the amount it is obligated to pay, with adjustments as sales are made.

Editas license agreement

In May 2018, the Company and Editas Medicine, Inc. ("Editas") entered into a license agreement (the "Editas License Agreement"). Pursuant to the Editas License Agreement, Editas granted to the Company licenses and options to acquire licenses to certain intellectual property rights owned or controlled by Editas, for specified uses. More specifically, Editas granted to the Company a worldwide, exclusive, sublicensable, license (subject to certain exceptions and conditions) under certain intellectual property controlled by Editas for the use of base editing therapies for the treatment of any field of human diseases and conditions, subject to certain exceptions (the "Beam Field," and the licenses granted or to be granted under the Editas License Agreement, the "Editas Development and Commercialization License"). Additionally, Editas granted to the Company a royalty-free, non-exclusive license under certain intellectual property owned or controlled by Editas to perform research activities in the Beam Field (the "Editas Research License"). Editas provided the Company with an exclusive option to obtain a Editas Development and Commercialization License to three additional groups of intellectual property owned or controlled by Editas, on a group by group basis, during the specified option period, subject to certain exceptions. Pursuant to the Editas License Agreement, the Company will use commercially reasonable efforts to develop a product that includes the rights licensed to the Company within a specified period of time and to commercialize any such products that have received regulatory approval in certain specified countries.

As consideration for the license and option rights granted by Editas, the Company paid a nominal one-time, nonrefundable, non-creditable upfront cash payment of $180,000. The Company also issued non-cash consideration, consisting of 1,833,333 shares of the Company's Series A-1 Preferred and 1,222,222 shares of the Company's A-2 Preferred, having an aggregate fair value of approximately $3.7 million. Both the one-time cash payment and the fair value of the preferred stock issued to Editas were recorded as research and development expense in the consolidated statements of operations. Additional consideration will be due to Editas if the Company elects to exercise its option to obtain an Editas Development and Commercialization License to any of the three categories of intellectual property underlying the Editas Research License, for a fee ranging from a mid-teen million dollar amount to a low to mid-eight digit dollar amount per group, depending on the timing of the option exercise. Additionally, the Company is required to reimburse Editas for certain payments Editas may be obligated to make under existing Editas license agreements related to the intellectual property being licensed to the Company, including (i) development, regulatory and commercial milestone payments and certain sublicense income payments due as a result of the Editas License Agreement and (ii) a percentage of the annual maintenance fees and patent fees due to certain of the Editas' licensors. In addition, to the extent any products are commercialized under an Editas Development and Commercialization License, the Company would be required to make royalty payments equivalent to the royalties that would be due from Editas to any applicable licensors of Editas related to the sales of such licensed products, plus an additional tiered low- to mid-single digit royalty, depending on whether such licensed product is covered by an Editas-owned patent.

The license rights and option rights granted by Editas to the Company are subject to the terms and conditions of the underlying license agreements that Editas is a party to and under which Editas licensed rights or option rights to the Company and the termination of such in-licenses, as applicable. Unless earlier terminated by either party pursuant to the terms of the agreement, the Editas License Agreement will continue in full force and effect and will expire on a licensed product-by licensed product and country-by-country basis upon the later of (i) the last-to-expire royalty term under any applicable institutional license to Editas and (ii) the date at which such product is no longer covered by a valid claim of a licensed Editas-owned patent in such country. The Company has the right, at its sole discretion, at any time to terminate Editas License Agreement in its entirety or on a group-by-group of intellectual property basis, upon ninety days written notice to Editas. Upon termination of the Editas License Agreement, all rights and licenses granted by the Editas to the Company (including the rights to exercise options and obtain such licenses) will immediately terminate and patents within

a group of patents will no longer be deemed licensed patents. Expiration or termination of the Editas License Agreement for any reason does not release either party of any obligation or liability which had accrued, or which is attributable to a period prior to such expiration or termination.

The Company concluded that the assets acquired from Editas did not meet the accounting definition of a business as inputs, but no processes or outputs were acquired with the license, and the licensed technology had not achieved technological feasibility. As the inputs that were acquired along with the license do not constitute a “business,” the transaction has been accounted for as an asset acquisition. As of the date of the Editas License Agreement, the assets acquired had no alternative future use and the assets had not reached a stage of technological feasibility. As a result, all share-based and cash payment obligations have been recorded as research and development expense in the consolidated statements of operations.

The option exercise fees under the agreement will be recorded as research and development expense, if and when the Company exercises such options. To date, no options have been exercised. The annual maintenance fees will be recorded as an expense on an annual basis based on the stated amount for the applicable year. Annual patent costs will be expensed as incurred. In addition, the Company is required to make certain development, regulatory and commercial milestone payments to Editas upon the achievement of specified milestone. The triggering of these milestone payments was not considered probable as of the acquisition date, and no expense has been recorded for these milestones as of December 31, 2018. To the extent applicable, sublicense income payments will be accrued for the amount the Company is obligated to pay under each applicable in-license as amounts are due Editas. Lastly, to the extent products are commercialized under the Editas License agreement, the Company will accrue royalty expense for the amount it is obligated to pay, with adjustments as sales are made.

8. Blink Therapeutics

On March 22, 2018, certain of Beam’s investors (“Primary Investors”) formed Blink to hold certain intellectual property related to RNA base editing.

On May 9, 2018, the Company entered into a merger option agreement (“Option Agreement”) with Blink. On the same date, Blink entered into the Broad License Agreement (see Note 7, License Agreements), issued 5,000,000 shares of Blink Series A Preferred to its investors (“Initial Closing”) at $1.00 per share, and issued restricted common stock to certain scientific founders. Also, on the same date, Beam and Blink were both owned by members of the same group of Primary Investors, having over 75% ownership in each entity, which consisted primarily of the Beam’s initial investors and scientific founders.

Under the Option Agreement, Blink granted Beam an option, exercisable on the date that Blink issued an aggregate of 10,000,000 additional shares of Blink Series A Preferred and ending on the second anniversary of such date to consummate a merger with Blink (“Blink Merger”), in exchange for a $121,000 option premium. In connection with the merger, Beam would issue two shares of Beam Series A-2 Preferred for each share of Blink Series A Preferred and issue two shares of Beam common stock for each share of Blink common stock.

In August 2018, Blink issued 10,000,000 shares of Blink Series A Preferred at $1.00 per share to the Primary Investors and Beam paid the $121,000 option premium to exercise its option to merge with Blink. On September 25, 2018 (the “Merger Date”), the merger was consummated and Blink became a wholly owned subsidiary of Beam.

As of May 9, 2018, as a result of the design and purpose of Blink and the Option Agreement, the Company determined that Blink was a VIE and that the Company was the primary beneficiary, because Beam had both (1) the power to direct the activities of Blink that most significantly impacted Blink’s economic performance and

(2) the right to receive benefits from Blink that could be significant to Blink. As a result, the Company began consolidating Blink on May 9, 2018. The operating activity of Blink from its formation on March 22, 2018 to May 9, 2018 was immaterial.

On the Merger Date, Beam exercised its option to acquire the Blink common and preferred shares in exchange for equity shares in Beam as follows:

- For each share of Blink Series A Preferred held, Blink shareholders received two shares of Beam Series A-2 Preferred or 30,000,000 shares;
- For each share of Blink common stock held by Broad, Broad received two shares of Beam common stock or 3,880,000 shares;
- For each vested and unvested share of Blink common stock issued to certain scientific founders of Blink, each founder received two shares of Beam common stock or 12,186,000 shares (of which 4,188,934 shares were vested and 7,997,066 will vest over time).

The Company recognized expense for the excess in value of the Beam Series A-2 Preferred and common stock exchanged for the Blink Series A Preferred and common stock, respectively, because the excess value was only transferred to certain investors of Beam and there were no other rights or privileges identified that require separate accounting as an asset. Accordingly, the Company recorded a $49.5 million loss in other expense representing the difference in value of the 30,000,000 shares of Series A-2 Preferred issued to Blink shareholders ($64.5 million) and the value of the Blink Series A Preferred ($15.0 million) exchanged by the Blink shareholders.

The Company recorded additional research and development expense of $2.2 million, which represented the difference in value of the 3,880,000 shares of Beam common stock issued to Broad ($3.5 million) and the value of the Blink common stock exchanged by Broad ($1.3 million).

The Company recorded additional stock-based compensation of $3.6 million, which represented the difference in value of the fully vested 4,188,934 shares issued to the scientific founders ($3.8 million) and the value of the Blink common stock exchanged ($0.2 million) by the Blink shareholders. Compensation expense of $7.2 million relating to the 7,997,066 unvested Blink common shares will be recorded over the remaining weighted average vesting period of 3.5 years.

9. Redeemable convertible preferred stock

In June 2017, the Company authorized the sale and issuance of up to 37,500,000 shares of Series A Preferred. The Series A Preferred financing was structured to close in three tranches: 5,000,000 shares of Series A-1 Preferred in the first tranche closing at $1.00 per share, up to 20,000,000 shares of Series A-1 Preferred at $1.00 per share in the second tranche closing, and up to 12,500,000 shares of Series A-2 Preferred at $2.00 per share in the third tranche closing. The Company determined that the right of certain committed investors to purchase 18,000,000 shares of Series A-1 Preferred in the second tranche closing and 5,000,000 shares of Series A-2 Preferred in the third tranche closing meets the definition of a freestanding financial instrument and should be recognized a liability on the balance sheet at fair value at inception and remeasured at each reporting period until settlement.

In the period from January 25, 2017 (Inception) to December 31, 2017, the Company issued 5,050,000 shares of Series A-1 Preferred at $1.00 per share for gross cash proceeds of $5.1 million, and incurred issuance costs of $66,000. Upon the first tranche closing, the Company recognized a tranche liability of $1.4 million for the fair

value of the future committed tranche obligations. The initial tranche liabilities were valued using an option pricing model based on the following inputs:

	Series A-1	Series A-2
Strike price	$ 1.00	$ 2.00
Expected volatility	65%	72%
Weighted-average risk-free interest rate	1.14%	1.35%
Expected dividend yield	—%	—%
Expected term (in years)	0.67	1.75

As of December 31, 2017, the fair value of the tranche liabilities was remeasured and was determined to be $1.0 million, using an option pricing model, based on the following inputs:

	Series A-1	Series A-2
Strike price	$ 1.00	$ 2.00
Expected volatility	75%	72%
Weighted-average risk-free interest rate	1.39%	1.53%
Expected dividend yield	—%	—%
Expected term (in years)	0.25	0.67

In February and May 2018, in an effort to raise additional financing, the Company amended the terms of the Series A-1 Preferred second tranche closing and the Series A-2 Preferred third tranche closing. The Company increased the shares to be issued to committed investors in Series A-1 Preferred second tranche closing from 18,000,000 shares to 19,111,111 shares. The Company also authorized 888,880 shares of Series A-1 Preferred as available to be issued to additional investors. The issuance price for the Series A-1 Preferred remained at $1.00 per share. The Company increased the shares to be issued to committed investors in the Series A-2 Preferred second tranche closing from 5,000,000 shares to 22,515,071 shares, of which 15,488,824 were designated for a Series A-2 third tranche closing and 7,026,247 designated for a Series A-2 fourth tranche closing. The Company also authorized 8,951,577 shares of Series A-2 Preferred as available to be issued to additional investors, of which 1,177,836 were designated as available for a Series A-2 Preferred third tranche closing and 7,773,741 designated as available for a Series A-2 Preferred fourth tranche closing. The Series A-2 Preferred issuance price was reduced from $2.00 to $1.50, per share. As a result of the amendments to the tranche rights to the committed investors, the Company remeasured the tranche liabilities at fair value and recognized the excess fair value upon modification of $0.1 million as other income (expense) in consolidated statements of operations.

The Company adjusted the carrying value of the tranche liabilities to their estimated fair value at each reporting date and upon issuance of the Series A-1 Preferred and Series A-2 Preferred tranche closings in 2018 and 2017, recognizing the changes in fair value in other income (expense) in the consolidated statement of operations and other comprehensive loss. During year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017, the Company recognized total other expense of $4.3 million and other income of $0.4 million, respectively, related to changes in the fair value of the tranche liabilities.

In February and May 2018, the Company closed on the second tranche of the Series A-1 Preferred and issued 19,999,991 shares of Series A-1 Preferred at $1.00 per share for gross cash proceeds of $20.0 million, and incurred issuance costs of $0.1 million. The tranche liability associated with the committed financing was re-measured at fair value of $0.8 million at closing with the fair value of the liability reclassified to the carrying value of the Series A-1 Preferred.

In May 2018, the Company entered into a license agreement with Editas (see Note 7, License Agreements), and issued 1,833,333 shares of Series A-1 Preferred and 1,222,222 shares of Series A-2 Preferred having an aggregate fair value of $2.0 million and $1.7 million, respectively, as partial consideration for the license.

In September 2018, upon the closing of the merger with Blink (see Note 8, Blink Therapeutics), the Company exchanged two shares of Beam Series A-2 Preferred for one share of Blink Series A Preferred. The exchange resulted in the issuance of 30,000,000 shares of Beam Series A-2 Preferred to the Blink preferred shareholders, having a fair value of $64.5 million. The Company recorded a loss of $49.5 million for the excess of the fair value of Beam shares exchanged for the Blink shares as other expense in the consolidated statements of operations and other comprehensive loss.

In June and October 2018, the Company closed on the Series A-2 third and fourth tranches and issued 22,515,087 shares of Series A-2 Preferred to committed investors and 9,867,577 to additional investors at $1.50 per share for gross cash proceeds of $33.8 million and $14.8 million, respectively. The Company incurred issuance costs of $0.1 million. The tranche liability associated with the committed financing was re-measured at fair value of $4.6 million at closing with the fair value of the liability reclassified to the carrying value of the Series A-2 Preferred. The fair value of Series A-2 Preferred issued to the additional investors was $18.7 million, resulting in the recognition of other expense of $5.7 million in the consolidated statements of operations and other comprehensive loss for the excess of the fair value of the shares issued over the cash proceeds received.

As of December 31, 2018, all tranche rights have been satisfied.

In November 2018, the Company authorized the sale of up to 37,250,000 shares of Series B Preferred. In November and December 2018, the Company issued 28,870,177 shares of Series B Preferred at $3.36 per share for gross cash proceeds of approximately $97.0 million, and incurred issuance costs of $0.5 million.

In February 2019, the Company authorized the sale of an additional 2,980,000 shares of Series B Preferred. In January and February 2019, the Company issued an additional 11,308,397 shares of Series B Preferred stock at a price of $3.36 per share, resulting in gross cash proceeds of $38.0 million.

As of December 31, 2018, the Series A Preferred and Series B Preferred (“Preferred Stock”) consisted of the following (in thousands, except for share data):

	Preferred stock authorized	Preferred stock issued and outstanding	Carrying value	Liquidation preference	Common stock issuable upon conversion
Series A-1 Preferred	26,833,324	26,833,324	$ 28,734	$ 28,734	26,833,324
Series A-2 Preferred	63,604,886	63,604,886	125,647	97,986	63,604,886
Series B Preferred	37,250,000	28,870,177	97,053	97,053	28,870,177
	127,688,210	119,308,387	$ 251,434	$ 223,773	119,308,387

As of December 31, 2017, there were 5,050,000 shares of Series A-1 Preferred issued and outstanding stock having a carrying value and liquidation preference of $5.3 million.

The following is a summary of the right rights and preferences of the Preferred Stock as of December 31, 2018:

Conversion—Each share of Preferred Stock may be converted at any time, at the option of the holder, into shares of common stock, subject to the applicable conversion rate as determined by dividing the original issue price by the conversion price. The initial conversion price for each of the Series A-1 Preferred, Series A-2 Preferred and Series B Preferred (each as may be adjusted for certain dilutive events) is $1.00, $1.50 and $3.36 per share, respectively. Each series of Preferred Stock automatically converts into shares of common stock on a 1:1 conversion ratio (as may be adjusted for certain dilutive events) at the earlier of the closing of an initial

public offering of the Company's common stock with gross proceeds to the Company of at least $60.0 million and a purchase price of $2.52 per share, or at the election of the holders of at least 60% of the then-outstanding shares of Preferred Stock (including at least one of the four largest Series B Preferred investors). If an initial public offering or other liquidation event results in the pricing or payment of less than $2.52 per share, then a certain Series B investor would need to consent to such transaction in order for an automatic conversion to take place.

Dividends—Holders are entitled to dividends of $0.08 per share with respect to Series A-1 Preferred, $0.12 per share with respect to Series A-2 Preferred, and $0.27 per share with respect to the Series B Preferred, when, as, and if declared by the board of directors. No dividends have been declared through December 31, 2018.

Voting Rights—Preferred Stock and common stock generally vote together as one class on an as-converted basis; however, common stock voting rights on certain matters are subject to the powers, preferences, and rights of the Preferred Stock. The holders of Series B Preferred, voting together as a single class, are entitled to elect one director to the Company's board of directors, the holders of Series A Preferred, voting together as a single class, are entitled to elect four directors to the Company's board of directors, and the holders of common stock, voting together as a single class, are entitled to elect the one director to the Company's board of directors. Certain actions, such as mergers, acquisition, liquidation, dissolution, wind up of business, and deemed liquidation events, must be approved by the holders of at least 60% of the then-outstanding shares of Preferred Stock and at least one of the four largest holders of Series B Preferred, unless such dissolution, wind up or liquidation would result in the pricing or payment of less than $2.52 per share of Series B Preferred to the Series B Preferred holders, in which case a certain Series B investor would need to approve.

Liquidation Preference—Upon liquidation, dissolution, or winding up of business, the holders of the Preferred Stock are entitled to receive a liquidation preference in priority over the holders of common stock, at an amount per share equal to the greater of i) the original Series A Preferred and Series B Preferred issue price plus any declared but unpaid dividends, or ii) the amount per share payable had all shares of Series A Preferred and Series B Preferred been converted to common stock immediately prior to such liquidation. If assets available for distribution are insufficient to satisfy the liquidation payment to holders in full, assets available for distribution will be allocated among holders based on their pro rata shareholdings. When holders are satisfied in full, any excess assets available for distribution will be allocated ratably among common stock holders based on their pro rata shareholdings. Upon a deemed liquidation event, as defined, holders have the option to redeem their shareholding at the liquidation payment amounts summarized above.

Redemption—The Preferred Stock is redeemable any time on or after the fifth anniversary of the initial closing of the Series B Preferred, and upon the election of the holders of at least 60% of the then-outstanding shares of Series B Preferred. Shares of Preferred Stock shall be redeemed by the Corporation as follows: first, the Series B Preferred shall be redeemed at a price equal to the Series B original issue price per share, plus any unpaid accrued dividends thereon, whether or not declared, together with any other dividends declared but unpaid thereon. Then, after the redemption of all shares of Series B Preferred, the Series A Preferred shall be redeemed as follows: (i) in the case of the Series A-1 Preferred, the Series A-1 original issue Price per share plus any unpaid accrued dividends thereon, whether or not declared, together with any other dividends declared but unpaid thereon, (ii) in the case of the Series A-2 Preferred, the Series A-2 Original issue price per share, plus any unpaid accrued dividends thereon, whether or not declared, together with any other dividends declared but unpaid thereon. Amounts due to the holders of the Preferred Stock will be due in three annual installments commencing not more than 60 days after the receipt of the redemption request.

10. Common stock

The Company was authorized to issue up to 190,000,000 and 75,000,000 shares of common stock with a $0.01 par value per share as of December 31, 2018 and December 31, 2017, respectively. In February 2019, the Company increased the authorized common stock shares issuable to 205,000,000.

The holders of common stock are entitled to one vote for each share of common stock. Subject to the payment in full of all preferential dividends to which the holders of the Preferred Stock are entitled, the holders of common stock shall be entitled to receive dividends out of funds legally available. In the event of any voluntary or involuntary liquidation, dissolution, or winding up of the Company, after the payment or provision for payment of all debts and liabilities of the Company and all preferential amounts to which the holders of Preferred Stock are entitled with respect to the distribution of assets in liquidation, the holders of common stock shall be entitled to share ratably in the remaining assets of the Company available for distribution.

In 2018, the Company issued 3,432,955 shares of common stock to Harvard pursuant to anti-dilution rights under the Harvard License Agreement. In the period from January 25, 2017 (Inception) to December 31, 2017, the Company issued to Harvard 454,545 shares of common stock upon signing the Harvard License Agreement.

In 2018, the Company issued Broad 3,880,000 shares of common stock in connection with the Blink Merger. Additionally, in connection with the Blink Merger, the Company issued certain scientific founders of Blink 4,188,934 shares of Beam common stock for their Blink vested restricted common stock.

As of December 31, 2018, the Company has reserved 119,308,387 shares of common stock for the potential conversion of Preferred Stock and 11,144,996 shares of common stock for the potential exercise of outstanding stock options under the 2017 Plan.

11. Stock option plan and grant plan

2017 stock option and grant plan

In June 2017, the board of directors adopted the 2017 Stock Option and Grant Plan (the “2017 Plan”) which provided for the grant of qualified incentive stock options and nonqualified stock options, restricted stock or other awards to the Company’s employees, officers, directors, advisors, and outside consultants for the issuance or purchase of shares of the Company’s common stock. As of December 31, 2017, the 2017 Plan allowed for the issuance of up to 1,612,371 shares of the Company’s common stock for the issuance of stock options and restricted stock. In 2018, the 2017 Plan was amended to provide up to 21,527,273 shares of the Company’s common stock for the issuance of stock options and restricted stock. In February and May 2019, the 2017 Plan was amended to provide up to 36,227,273 shares of common stock for the issuance of stock options and restricted stock. At December 31, 2018 there were 3,523,383 shares available for future grant under the 2017 Plan. In 2018 and 2017, 7,997,066 and 17,045,455 shares, respectively, were issued to scientific founders outside of the 2017 Plan.

The 2017 Plan is administered by the board of directors. The exercise prices, vesting and other restrictions are determined at the discretion of the board of directors, except that the exercise price per share of stock options may not be less than 100% of the fair market value of the common stock on the date of grant. Stock options awarded under the 2017 Plan expire 10 years after the grant date, unless the board of directors sets a shorter term. Vesting periods for awards under the 2017 Plan are determined at the discretion of the board of directors. Incentive stock options granted to employees and shares of restricted stock granted to officers, founders and consultants of the Company typically vest over four years. Certain options provide for accelerated vesting if there is a change in control, as defined in the 2017 Plan. Non-statutory options granted to employees, officers, members of the board of directors and consultants of the Company typically vest over four years.

For the year ended December 31, 2018 and for the period from January 25, 2017 (Inception) to December 31, 2017, the Company recorded stock-based compensation expense of $7.0 million and $0.2 million, respectively. Stock compensation expense for 2018 included: $3.6 million related to Beam common stock issued to scientific founders in connection with the Blink merger, $3.0 million related to restricted stock, and $0.4 million for stock options. Stock compensation expense for the period from January 25, 2017 (Inception) to December 31, 2017 included $0.2 million related to restricted stock and $3,000 related to stock options.

Stock-based compensation expense recorded as research and development and general and administrative expenses in the consolidated statements of operations and other comprehensive loss is as follows (in thousands):

	Year ended December 31, 2018	Period from January 25, 2017 (inception) to December 31, 2017
Research and development	$ 5,893	$ 159
General and administrative	1,109	39
Total stock-based compensation expense	$ 7,002	$ 198

Stock options

The assumptions used in the Black-Scholes option-pricing model for stock options granted were

	Year ended December 31, 2018	Period from January 25, 2017 (inception) to December 31, 2017
Expected volatility	79.4—83.1%	73.5–81.7%
Weighted-average risk-free interest rate	2.83%	2.15%
Expected dividend yield	0%	0%
Expected term (in years)	6.25	6.25–10.0

A summary of option activity under the 2017 Plan during the year ended December 31, 2018 was as follows:

	Number of options	Weighted average exercise price	Weighted average remaining contractual life (years)	Aggregate intrinsic value(1) (in thousands)
Outstanding at January 1, 2018	539,644	$ 0.11	9.8	$ —
Granted	10,681,934	$ 0.20		
Exercised	(76,582)	$ 0.12		
Forfeitures	—			
Outstanding at December 31, 2018	11,144,996	$ 0.19	9.6	13,804
Vested and expected to vest as of December 31, 2018	11,144,996	$ 0.19	9.6	13,804
Exercisable as of December 31, 2018	272,147	$ 0.15	8.9	347

(1) The aggregate intrinsic value is calculated as the difference between the exercise price of the underlying options and the estimated fair value of the common stock for the options that were in the money as of December 31, 2018 and 2017.

During the year ended December 31, 2018, the Company granted 1,135,909 stock options to certain employees to purchase shares of common stock that contain certain performance-based vesting criteria, primarily related to the achievement of certain development milestones related to editing applications, and the closing price of the Company's common stock following an IPO. Recognition of stock-based compensation expense associated with these performance-based stock options commences when the performance condition is considered probable of achievement, using management's best estimates, which consider the inherent risk and uncertainty regarding the future outcomes of the milestones. The achievement of the performance milestones was not considered probable, nor met, and therefore no expense has been recognized related to these awards for the year-ended December 31, 2018.

The weighted-average grant date fair value per share of stock options granted during the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017 was $0.25 and $0.08, respectively. The aggregate intrinsic value of stock options exercised during the year ended December 31, 2018 was $61,000. There were no options exercised during the period ended December 31, 2017.

The aggregate grant date fair value of stock options vested during the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017 was approximately $60,000 and $1,000, respectively.

As of December 31, 2018 and 2017, there was $2.2 million and $38,468, respectively, of unrecognized compensation cost related to unvested stock options, which is expected to be recognized over a weighted-average period of approximately 3.55 and 3.43 years, respectively.

Restricted stock

Pursuant to the 2017 Plan, the Company granted 1,022,727 shares of restricted common stock to a board member, having a fair value of $0.1 million, that vest over a period of 30 months. The Company also granted 50,000 shares of restricted to a consultant that vest over a period of four years. During 2017, the Company issued 17,045,455 shares of restricted common stock to certain scientific founders with a fair value of $1.9 million. A portion of the shares are subject to vesting over a period of four years with the commencement of vesting of the remaining shares upon the achievement of certain financing milestones, and in certain instances continued service after the milestones are achieved.

In 2018, the Company issued 7,997,066 shares of restricted common stock to certain scientific founders of Blink upon the Blink Merger (see Note 8, Blink Therapeutics), having a fair value of $7.2 million, and subject to vesting over a period of 3.5 years. In 2018, the Company granted 1,893,938 shares of restricted common stock of to certain scientific founders of the Company, having a grant date fair value of $0.4 million. A portion of these shares are subject to vesting over a period of four years, with the commencement of vesting of the remaining shares upon the achievement of certain financing milestones, and in certain instances continued service after the milestones are achieved. In 2018, the Company issued 3,815,647 shares of restricted common stock to an employee, having a fair value of $3.4 million, that vest over a period of four years.

If the holders of the above restricted common stock cease to have a business relationship with the Company, the Company may reacquire any unvested shares of common stock held by these individuals for the original purchase price, and in certain instances for no consideration. The amounts received to date for the purchase price of restricted stock are immaterial. The unvested shares of restricted common stock are not considered outstanding shares for accounting purposes until the shares vest.

A summary of the status of and change in unvested restricted stock as of December 31, 2018 was as follows:

	Shares	Weighted-average grant date fair value
Unvested as of January 25, 2017 (Inception)	—	
Issued	18,118,182	$ 0.11
Vested	(1,729,249)	$ 0.11
Unvested as of December 31, 2017	16,388,933	$ 0.11
Issued	13,706,651	$ 0.80
Vested	(11,194,543)	$ 0.23
Unvested as of December 31, 2018	18,901,041	$ 0.57

The aggregate fair value of restricted shares that vested during the year ended December 31, 2018 and the period from January 25, 2017 (Inception) to December 31, 2017, was $4.6 million and approximately $0.2 million, respectively.

At December 31, 2018, there was approximately $10.9 million of unrecognized stock-based compensation expense related to restricted stock that is expected to vest. These costs are expected to be recognized over a weighted-average remaining vesting period of 2.8 years.

12. Net loss per share attributable to common stockholders

The following table summarizes the computation of basic and diluted net loss per share attributable to common stockholders of the Company (in thousands except share and per share amounts):

	Year ended December 31, 2018	Period from January 25, 2017 (inception) to December 31, 2017
Numerator:		
Net loss attributable to common stockholders	$ (117,325)	$ (9,687)
Denominator:		
Weighted average number of common shares, basic and diluted	12,977,480	1,159,283
Net loss per common share attributable to common stockholders, basic and diluted	$ (9.04)	$ (8.36)

The Company's potential dilutive securities, which include redeemable convertible preferred stock, unvested restricted stock, common stock options and shares issuable under anti-dilution rights have been excluded from the computation of diluted net loss per share as the effects would be anti-dilutive. Therefore, the weighted average number of common shares outstanding used to calculate both basic and diluted net loss per share attributable to common stockholders is the same. The Company excluded the following potential common shares, presented based on amounts outstanding at period end, from the computation of diluted net loss per share attributable to common stockholders for the period indicated because including them would have had an anti-dilutive effect:

	Year ended December 31, 2018	Period from January 25, 2017 (inception) to December 31, 2017
Redeemable convertible preferred stock	119,308,387	5,050,000
Unvested restricted stock	18,901,041	16,388,933
Outstanding options to purchase common stock	11,144,996	539,644
Shares issuable under anti-dilution rights	—	795,455
Total	149,354,424	22,774,032

13. Income taxes

A reconciliation of the income tax expense computed using the federal statutory income tax rate to the Company's effective income tax rate is as follows:

	Year ended December 31, 2018	Period from January 25, 2017 (inception) to December 31, 2017
Federal statutory rate	21.0%	34.0%
Net operating loss carryforwards	—	—
State income taxes, net of federal benefit	2.2	4.4
Tax rate reduction due to the TCJA	—	(13.6)
Research and development tax credits	0.5	0.8
Nondeductible/ nontaxable permanent items	(13.4)	1.7
Other	—	(0.1)
Change in valuation allowance	(10.3)	(27.2)
Total	—%	—%

The components of the Company's deferred taxes are as follows (in thousands):

	December 31,	
	2018	2017
Deferred tax assets:		
Net operating loss carryforwards	$ 10,971	$ 959
Capitalized costs—net of amortization	44	13
Research and development tax credits	963	62
Deferred rent	2,070	5
Accrued expenses	1,071	1,320
Property and equipment	(99)	(8)
Total deferred tax assets	15,020	2,351
Less: valuation allowance	(15,020)	(2,351)
Deferred tax assets, net	$ —	$ —

On December 22, 2017, the Tax Cuts and Jobs Act (the "TCJA") was signed into law in the United States. The TCJA reduced the U.S. corporate income tax rate from 34% to 21% for tax years beginning after December 31, 2017. As a result of the newly enacted law, the Company was required to revalue all deferred tax assets and liabilities existing as of the date of enactment so as to reflect the reduction in the federal corporate income tax rate. This revaluation resulted in a reduction to the Company's 2017 deferred tax asset of $998,000, with a corresponding reduction to the Company's valuation allowance. Consequently, there was no impact on the accompanying consolidated financial statements that resulted from the reduction in the federal tax rate. Other relevant provisions of the TCJA did not have a material impact on the accompanying consolidated financial statements.

The Company had no income tax expense due to the operating loss incurred for the period from January 25, 2017 (Inception) to December 31, 2017 and the year ended December 31, 2018. Management has evaluated the positive and negative evidence bearing upon the realizability of the Company's net deferred tax assets and has determined that it is more likely than not that the Company will not recognize the benefits of the net deferred tax assets. As a result, the Company has recorded a full valuation allowance at December 31, 2018 and 2017. The valuation allowance increased by $12.7 million in 2018, due to the increase in deferred tax assets, primarily due to net operating loss carryforwards, and research and development tax credits, and deductible accrued expenses. The valuation allowance increased by $2.4 million in 2017, as 2017 was the Company's inception.

Realization of the future tax benefits is dependent on many factors, including the Company's ability to generate taxable income within the net operating loss carryforward period. Under the provisions of the Internal Revenue Code, certain substantial changes in the Company's ownership, including a sale of the Company or significant changes in ownership due to sales of equity, may have limited, or may limit in the future, the amount of net operating loss carryforwards, which could be used annually to offset future taxable income. The Company has not completed a study to assess whether a change of control has occurred or whether there have been multiple changes of control since the Company's formation due to the significant complexity and cost associated with such study and because there could be additional changes in control in the future. As a result, the Company is not able to estimate the effect of the change in control, if any, on the Company's ability to utilize net operating loss and research and development credit carryforwards in the future.

As of December 31, 2018, the Company had $40.2 million of federal and $40.2 million of state net operating loss carryforwards. If not utilized, the federal and state net operating loss carryforwards expire starting in 2037 and 2037, respectively. Included in the $40.2 million federal net operating loss carryforwards is $36.6 million of net

operating loss generated in 2018 that will not expire. Additionally, as of December 31, 2018, the Company had $0.6 million of federal and $0.5 million of Massachusetts tax credits that expire starting in 2037 and 2021, respectively.

As of December 31, 2018 and 2017, the Company had no uncertain tax positions. The Company recognizes both interest and penalties associated with unrecognized tax benefits as a component of income tax expense. The Company has not recorded any interest or penalties for unrecognized tax benefits since its inception.

The Company files income tax returns in the United States and the Commonwealth of Massachusetts in all tax years since inception. The tax year 2017 remain open to examination by these jurisdictions, as carryforward attributes generated in past years may be adjusted in a future period. The Company is not currently under examination by the Internal Revenue Service or any other jurisdiction for these years.

14. Related party transactions

For the year ended December 31, 2018, the Company made payments of $0.3 million, $0.2 million and $0.2 million and issued restricted shares with a grant date fair value of $0.3 million, $45,000 and $45,000 to each of the three founder shareholders for scientific consulting and other expenses. For the period from January 25, 2017 (Inception) to December 31, 2017, the Company made payments of $0.1 million to each of the three founder shareholders of the Company for scientific consulting services rendered during those periods.

In 2018, the Company purchased shares of Verve Therapeutics, Inc. (“Verve”) series A preferred stock valued at $0.3 million. The Company and Verve have a common board member.

In March 2018, certain of Beam’s investors formed Blink to hold certain intellectual property related to base editing. In September 2018, the Company exercised its option to acquire Blink (see Note 8, Blink Therapeutics).

15. Employee benefits

In 2018, the Company established a defined-contribution plan under Section 401(k) of the Internal Revenue Code (the “401(k) Plan”). The 401(k) Plan covers all employees who meet defined minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pretax basis. The Company is not required to make and has not made any matching contributions to the 401(k) Plan for the year ended December 31, 2018.

16. Subsequent events

The Company evaluated all subsequent events through July 26, 2019, the date that these consolidated financial statements were issued, to determine if such events should be reflected in these consolidated financial statements.

Redeemable convertible preferred stock

In February 2019, the Company authorized the sale of an additional 2,980,000 shares of Series B Preferred. In January and February 2019, the Company issued an additional 11,308,397 shares of Series B Preferred stock at a price of $3.36 per share, resulting in gross cash proceeds of $38.0 million.

Verve

In April 2019, the Company entered into a Collaboration and License Agreement with Verve. Under the terms of the agreement, the Company granted Verve an exclusive license to certain Company base editor technology, an

exclusive license to the Company's delivery technology, and an interest in a joint collaboration activity. Verve granted the Company a non-exclusive license under know-how and patents controlled by Verve, and an interest in joint collaboration technology.

In exchange for the Company's licenses, the Company received 2,556,322 shares of Verve common stock. Additionally, Verve will make milestone payments to the Company for certain clinical and regulatory events. Either party may owe the other party other milestone payments for certain clinical and regulatory events related to the delivery technology products. Royalty payments may become due by either party to the other based on the net sales of any commercialized collaboration products under the agreement.

MIT lease

In April 2019, the Company entered into a noncancelable lease agreement with Massachusetts Institute of Technology ("MIT") for 123,209 square feet of laboratory and office space to be built in Cambridge, Massachusetts. The leased space will be divided into two phases; phase one consisting of 92,554 square feet, and phase two consisting of 30,655 square feet. Monthly rent of $0.7 million for phase one will commence on the date which the phase one space is delivered to the Company, which is currently estimated to occur in August 2021. monthly rent of $0.3 million for phase two will commence four months after the date which the phase two space is delivered to the Company, which is currently estimated to occur in December 2022. The lease is subject to fixed rate escalation increases over the term of the lease. The lease expires 12 years from the phase two commencement date and the Company has the option to extend the lease for two extension terms of 5 years each. The landlord has agreed to fund up to $23.4 million of tenant improvements. Upon executing the lease, the Company provided the landlord a letter of credit of $11.8 million.

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Beam Therapeutics Inc.

shares of common stock

Joint bookrunning managers

J.P. Morgan **Jefferies** **Barclays**

Lead manager

Wedbush PacGrow

, 2019

Through and including , 2019 (the 25th day after the date of this prospectus), all dealers effecting transactions in the Common Stock, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

Part II

Information not required in prospectus

Item 13. other expenses of issuance and distribution.

The following table sets forth the costs and expenses, other than the underwriting discounts and commissions, payable by the registrant in connection with the sale of common stock being registered. All amounts are estimates except for the SEC registration fee, the FINRA filing fee and the Nasdaq listing fee:

Item		Amount to be paid
SEC registration fee	$	*
FINRA filing fee		*
Nasdaq listing fee		*
Printing and engraving expenses		*
Legal fees and expenses		*
Accounting fees and expenses		*
Transfer Agent fees and expenses		*
Miscellaneous expenses		*
Total	$	*

* To be completed by amendment

Item 14. indemnification of directors and officers.

As permitted by Section 102(b)(7) of the DGCL, we plan to include in our amended and restated certificate of incorporation a provision to eliminate the personal liability of our directors for monetary damages for breach of their fiduciary duties as directors, subject to certain exceptions. In addition, our amended and restated certificate of incorporation and by-laws will provide that we are required to indemnify our officers and directors under certain circumstances, including those circumstances in which indemnification would otherwise be discretionary, and we are required to advance expenses to our officers and directors as incurred in connection with proceedings against them for which they may be indemnified, in each case except to the extent that the DGCL prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145(a) of the DGCL provides that a corporation shall have the power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interest of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere or its equivalent shall not, of itself, create a presumption that the person did not act in good faith and in a manner which the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that his conduct was unlawful.

Section 145(b) of the DGCL provides that a corporation shall have the power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by him in connection with the defense or settlement of such action or suit if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

We have entered into indemnification agreements with our directors and, prior to the completion of this offering, intend to enter into indemnification agreements with each of our officers. These indemnification agreements will provide broader indemnity rights than those provided under the DGCL and our amended and restated certificate of incorporation. These indemnification agreements are not intended to deny or otherwise limit third-party or derivative suits against us or our directors or officers, but to the extent a director or officer were entitled to indemnity or contribution under the indemnification agreement, the financial burden of a third-party suit would be borne by us, and we would not benefit from derivative recoveries against the director or officer. Such recoveries would accrue to our benefit but would be offset by our obligations to the director or officer under the indemnification agreement.

The underwriting agreement will provide that the underwriters are obligated, under certain circumstances, to indemnify our directors, officers and controlling persons against certain liabilities, including liabilities under the Securities Act.

We maintain directors' and officers' liability insurance for the benefit of our directors and officers.

Item 15. recent sales of unregistered securities.

The following list sets forth information regarding all unregistered securities sold by us since January 25, 2017, the date or our inception. No underwriters were involved in the sales and the certificates representing the securities sold and issued contain legends restricting transfer of the securities without registration under the Securities Act or an applicable exemption from registration.

Issuances of capital stock

In 2017 and 2018, we issued an aggregate of 26,833,324 shares of our Series A-1 convertible preferred stock for aggregate considerations of $25.0 million to 20 investors.

In 2018, we issued an aggregate of 33,604,886 shares of our Series A-2 convertible preferred stock for aggregate consideration of $48.6 million to 21 investors, and Blink issued an aggregate of 15,000,000 even shares of its series A convertible preferred stock for aggregate consideration of $15.0 million to 19 investors, each of which converted into two shares of our Series A-2 convertible preferred stock upon consummation of the Blink Merger.

In 2019 and 2019, we issued an aggregate of 40,178,574 shares of our Series B convertible preferred stock for aggregate consideration of $135.0 million to 27 investors.

No underwriters were used in the foregoing transactions. All sales of securities described above were made in reliance upon the exemption from registration provided by Section 4(a)(2) of the Securities Act for transactions by an issuer not involving a public offering.

Grants of stock options and restricted stock

Since January 1, 2019, we have granted restricted stock and stock options to purchase an aggregate of 9,421,589 shares of our common stock at a weighted-average exercise price of $1.37 to employees and directors.

In 2018, we granted stock options to purchase an aggregate of 10,681,934 shares of our common stock at a weighted-average exercise price of $0.20 to employees, directors and consultants.

In 2017, we granted stock options to purchase an aggregate of 539,644 shares of our common stock at a weighted-average exercise price of $0.11 to employees, directors and consultants.

The issuances of the above securities were exempt either pursuant to Rule 701, as transactions pursuant to a compensatory benefit plan, or pursuant to Section 4(a)(2), as transactions by an issuer not involving a public offering.

Item 16. exhibits and consolidated financial statement schedules.

(a) Exhibits

See the Exhibit Index attached to this Registration Statement, which is incorporated by reference herein.

(b) Consolidated Financial Statement Schedules

Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the consolidated financial statements or notes thereto.

Item 17. undertakings.

The undersigned Registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act, and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer, or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question of whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned Registrant hereby undertakes that:

1. For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this Registration Statement in reliance upon Rule 430A and contained in a form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this Registration Statement as of the time it was declared effective.

2. For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

Exhibit index

Exhibit number	Description of document
1.1*	Form of Underwriting Agreement
3.1*	Certificate of Amendment to Third Amended Certificate of Incorporation of Beam Therapeutics Inc.
3.2*	Form of Fourth Amended Certificate of Incorporation of Beam Therapeutics Inc. (to be effective upon the closing of this offering)
3.3*	Form of Amended and Restated By-laws of Beam Therapeutics Inc. (to be effective upon the closing of this offering)
4.1*	Specimen stock certificate evidencing shares of common stock
4.2	Amended and Restated Investors' Rights Agreement, by and among Beam Therapeutics Inc. and the investors party thereto, dated as of November 8, 2018
5.1*	Opinion of Ropes & Gray LLP
10.1	Lease, by and between UP 26 Landsdowne, LLC and Beam Therapeutics Inc., dated February 21, 2018
10.2	Indenture of Lease, by and between Massachusetts Institute of Technology and Beam Therapeutics Inc., dated as of April 24, 2019
10.3	License Agreement, by and between MIL 21E, LLC and Beam Therapeutics Inc., dated as of June 25, 2019
10.4++	License Agreement, by and between the President and Fellows of Harvard College and Beam Therapeutics Inc., dated as of June 27, 2017
10.5++	License Agreement, by and between The Broad Institute, Inc. and Blink Therapeutics Inc., dated as of May 9, 2018
10.6++	License Agreement, by and between Editas Medicine, Inc. and Beam Therapeutics Inc., dated as of May 9, 2018
10.7++	License Agreement, by and between Bio Palette Co., Ltd. and Beam Therapetics Inc., dated as of March 27, 2019
10.8	Beam Therapeutics Inc. 2017 Stock Option and Grant Plan
10.9	Form of Restricted Stock Agreement under the Beam Therapeutics Inc. 2017 Stock Option and Grant Plan
10.10	Form of Incentive Stock Option Grant Notice under the Beam Therapeutics Inc. 2017 Stock Option and Grant Plan
10.11	Form of Non-Qualified Stock Option Grant Notice under the Beam Therapeutics Inc. 2017 Stock Option and Grant Plan
21.1	List of Subsidiaries of Beam Therapeutics Inc.
23.1*	Consent of Deloitte & Touche LLP
23.2*	Consent of Ropes & Gray LLP (included in Exhibit 5.1)
24.1*	Power of Attorney (included on signature page)

* To be filed by amendment

+ Indicates management contract or compensatory plan

++ Portions of this exhibit (indicated by asterisks) have been omitted because the Registrant has determined they are not material and would likely cause competitive harm to the Registrant if publicly disclosed

Signatures

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Cambridge, State of Massachusetts, on , 2019.

BEAM THERAPEUTICS INC.

By: _____
John Evans
President and Chief Executive Officer

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints John Evans and Christine Bellon, and each of them singly, our true and lawful attorneys, with full power to them, and to each of them singly, to sign for us and in our names in the capacities indicated below, the registration statement on Form S-1 filed herewith, and any and all pre-effective and post-effective amendments to said registration statement, and any registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, in connection with the registration under the Securities Act of 1933, as amended, of equity securities of the Company, and to file or cause to be filed the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as each of us might or could do in person, and hereby ratifying and confirming all that said attorneys, and each of them, or their substitute or substitutes, shall do or cause to be done by virtue of this Power of Attorney.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed by the following persons in the capacities and on the dates indicated:

Signature	Title	Date
John Evans	President, Chief Executive Officer and Director (Principal Executive Officer)	, 2019
Suzanne Fleming	Senior Vice President, Finance and Treasurer (Principal Accounting and Financial Officer)	, 2019
Kristina Burow	Director	, 2019
Mark Fishman, M.D.	Director	, 2019
Stephen Knight, M.D.	Director	, 2019
Carole Ho, M.D.	Director	, 2019
Robert Nelsen	Director	, 2019

Exhibit 4.2

Execution Version

BEAM THERAPEUTICS INC.
AMENDED AND RESTATED
INVESTORS' RIGHTS AGREEMENT

NOVEMBER 8, 2018

TABLE OF CONTENTS

BEAM THERAPEUTICS INC.

AMENDED AND RESTATED
INVESTORS' RIGHTS AGREEMENT

THIS AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (this "**Agreement**"), is made as of the 8th day of November, 2018, by and among Beam Therapeutics Inc., a Delaware corporation (the "**Company**"), each of the investors listed on Schedule A hereto, each of which is referred to in this Agreement as an "**Investor**."

RECITALS

WHEREAS, the Company and certain of the Investors are parties to an Investors' Rights Agreement dated as of June 28, 2017, as amended, (the "**Prior Agreement**"), entered into in connection with the purchase of shares of such Series A Preferred Stock.

WHEREAS, the Company and Holders of at least sixty percent (60%) of the Registrable Securities currently outstanding and desire to amend and restate the Prior Agreement in its entirety and to accept the rights created pursuant to this Agreement in lieu of the rights granted to them under the Prior Agreement; and

WHEREAS, certain of the Investors are parties to that certain Series B Preferred Stock Purchase Agreement dated as of the date hereof between the Company and certain of the Investors (the "**Purchase Agreement**"), under which certain of the Company's and such Investors' obligations are conditions upon the execution and delivery of this Agreement by such Investors, Existing Investors holding a majority of the Registrable Securities, and the Company.

NOW, THEREFORE, in consideration of these premises and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Company and the Investors, including the Existing Investors, each hereby agree to amend and restate the Prior Agreement in its entirety as set forth herein, and the parties hereto further agree as follows:

1. Definitions. For purposes of this Agreement:

1.1 "**Affiliate**" means, with respect to any specified Person, any other Person who, directly or indirectly, controls, is controlled by, or is under common control with such Person, including without limitation any general partner, limited partner, member, manager, managing member, employee, officer or director of such Person or any venture capital fund now or hereafter existing that is controlled by one or more general partners or managing members of, or shares the same management company with, such Person. As used herein, "control," as used with respect to any Person, shall mean the possession, directly or indirectly, of the power to direct the management or policies of such Person, directly or indirectly, whether through the ownership of voting securities, by contract or otherwise, and the terms "controlling" and "controlled" shall have meanings correlative to the foregoing. For purposes of the preceding definition of Affiliate, (a) F-Prime Capital Partners Healthcare Fund V LP and its Affiliates are deemed to be Affiliates of Eight Roads Ventures Japan II L.P. and its Affiliates, and (b) investment funds directly or indirectly managed or advised by Hillhouse Capital Management, Ltd. are deemed to be Affiliates of Hillhouse.

1.2 "**Common Stock**" means shares of the Company's common stock, par value $0.01 per share.

1.3 "**Competitor**" means a Person engaged, directly or indirectly (including through any partnership, limited liability company, corporation, joint venture or similar arrangement (whether now existing or formed hereafter)), in base editing for human therapeutics, but shall not include any financial investment firm or collective investment vehicle that, together with its Affiliates, holds less than twenty-five percent (25)% of the outstanding equity of any Competitor and does not, nor do any of its Affiliates, have a right to designate any member of the Board of Directors of any Competitor; provided, however, that none of Hillhouse and its Affiliates, ARCH and its Affiliates and F-Prime and its Affiliates shall be considered Competitors for purposes of this Agreement.

1.4 "**Damages**" means any loss, damage, claim or liability (joint or several) to which a party hereto may become subject under the Securities Act, the Exchange Act, or other federal or state law, insofar as such loss, damage, claim or liability (or any action in respect thereof) arises out of or is based upon: (i) any untrue statement or alleged untrue statement of a material fact contained in any registration statement of the Company, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto; (ii) an omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading; or (iii) any violation or alleged violation by the indemnifying party (or any of its agents or Affiliates) of the Securities Act, the Exchange Act, any state securities law, or any rule or regulation promulgated under the Securities Act, the Exchange Act, or any state securities law.

1.5 "**Derivative Securities**" means any securities or rights convertible into, or exercisable or exchangeable for (in each case, directly or indirectly), Common Stock, including options and warrants.

1.6 "**Exchange Act**" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

1.7 "**Excluded Registration**" means (i) a registration relating to the sale of securities to employees of the Company or a subsidiary pursuant to a stock option, stock purchase, or similar plan; (ii) a registration relating to an SEC Rule 145 transaction; (iii) a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities; or (iv) a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered.

1.8 "**Form S-1**" means such form under the Securities Act as in effect on the date hereof or any successor registration form under the Securities Act subsequently adopted by the SEC.

1.9 "**Form S-3**" means such form under the Securities Act as in effect on the date hereof or any registration form under the Securities Act subsequently adopted by the SEC that permits incorporation of substantial information by reference to other documents filed by the Company with the SEC.

1.10 "**GAAP**" means generally accepted accounting principles in the United States.

1.11 "**Holder**" means any holder of Registrable Securities who is a party to this Agreement.

1.12 "**Immediate Family Member**" means a child, stepchild, grandchild, parent, stepparent, grandparent, spouse, sibling, mother-in-law, father-in- law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, including, adoptive relationships, of a natural person referred to herein.

1.13 "**Initiating Holders**" means, collectively, Holders who properly initiate a registration request under this Agreement.

1.14 "**IPO**" means the Company's first underwritten public offering of its Common Stock under the Securities Act.

1.15 "**Key Employee**" means any executive-level employee (including, division director and vice president-level positions) as well as any employee who, either alone or in concert with others, develops, invents, programs, or designs any Company Intellectual Property (as defined in the Purchase Agreement).

1.16 "**Major Investor**" means any Investor that, individually or together with such Investor's Affiliates, holds at least 2,000,000 shares of Registrable Securities (as adjusted for any stock split, stock dividend, combination, or other recapitalization or reclassification effected after the date hereof).

1.17 "**New Securities**" means, collectively, equity securities of the Company, whether or not currently authorized, as well as rights, options, or warrants to purchase such equity securities, or securities of any type whatsoever that are, or may become, convertible or exchangeable into or exercisable for such equity securities.

1.18 "**Person**" means any individual, corporation, partnership, trust, limited liability company, association or other entity.

1.19 "**Preferred Director**" means, together, the Series A Directors and the Series B Director.

1.20 "**Preferred Stock**" means, together, shares of Series A Preferred Stock and Series B Preferred Stock.

1.21 "**Registrable Securities**" means (i) the Common Stock issuable or issued upon conversion of Preferred Stock; (ii) any Common Stock, or any Common Stock issued or issuable (directly or indirectly) upon conversion and/or exercise of any other securities of the Company, acquired by the Investors after the date hereof; and (iii) any Common Stock issued as (or issuable upon the conversion or exercise of any warrant, right, or other security that is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of, the shares referenced in clauses (i) and (ii) above; excluding in all cases, however, any Registrable Securities sold by a Person in a transaction in which the applicable rights under this Agreement are not assigned pursuant to Section 6.1, and excluding for purposes of Section 2 any shares for which registration rights have terminated pursuant to Section 2.13 of this Agreement.

1.22 "**Registrable Securities then outstanding**" means the number of shares determined by adding the number of shares of outstanding Common Stock that are Registrable Securities and the number of shares of Common Stock issuable (directly or indirectly) pursuant to then exercisable and/or convertible securities that are Registrable Securities.

1.23 "**Restricted Securities**" means the securities of the Company required to be notated with the legend set forth in Section 2.12(b) hereof.

1.24 "**SEC**" means the Securities and Exchange Commission.

1.25 "**SEC Rule 144**" means Rule 144 promulgated by the SEC under the Securities Act.

1.26 "**SEC Rule 145**" means Rule 145 promulgated by the SEC under the Securities Act.

1.27 "**Securities Act**" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

1.28 "**Selling Expenses**" means all underwriting discounts, selling commissions, and stock transfer taxes applicable to the sale of Registrable Securities, and fees and disbursements of counsel for any Holder, except for the fees and disbursements of the Selling Holder Counsel borne and paid by the Company as provided in Section 2.6.

1.29 "**Series A Director**" means any director of the Company that the holders of record of the Series A Preferred Stock are entitled to elect pursuant to the Company's Certificate of Incorporation.

1.30 "**Series A Preferred Stock**" means, together, shares of the Company's Series A-1 Preferred Stock, par value $0.01 per share, and shares of the Company's Series A-2 Preferred Stock, par value $0.01 per share.

1.31 "**Series B Director**" means any director of the Company that the holders of record of the Series B Preferred Stock are entitled to elect pursuant to the Company's Certificate of Incorporation.

1.32 "**Series B Preferred Stock**" means shares of the Company's Series B Preferred Stock, par value $0.01 per share.

2. Registration Rights. The Company covenants and agrees as follows:

2.1 Demand Registration.

(a) Form S-1 Demand. If at any time after the earlier of (i) June 28, 2022 or (ii) one hundred eighty (180) days after the effective date of the registration statement for the IPO, the Company receives a request from Holders of at least sixty percent (60%) of the Registrable Securities then outstanding that the Company file a Form S-1 registration statement with respect to at least forty percent (40%) of the Registrable Securities then outstanding (or a lesser percent if the anticipated aggregate offering price, net of Selling Expenses, would exceed $15 million), then the Company shall (x) within ten (10) days after the date such request is given, give notice thereof (the "**Demand Notice**") to all Holders other than the Initiating Holders; and (y) as soon as practicable, and in any event within sixty (60) days after the date such request is given by the Initiating Holders, file a Form S-1 registration statement under the Securities Act covering all Registrable Securities that the Initiating Holders requested to be registered and any additional Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within twenty (20) days of the date the Demand Notice is given, and in each case, subject to the limitations of Sections 2.1(c) and 2.3.

(b) Form S-3 Demand. If at any time when it is eligible to use a Form S-3 registration statement, the Company receives a request from Major Investors holding at least twenty percent (20%) of the Registrable Securities then outstanding that the Company file a Form S-3 registration statement with respect to outstanding Registrable Securities of such Holders having an anticipated aggregate offering price, net of Selling Expenses, of at least $5 million, then the Company shall (i) within ten (10) days after the date such request is given, give a Demand Notice to all Holders other than the Initiating Holders; and (ii) as soon as practicable, and in any event within forty-five (45) days after the date such request is given by the Initiating Holders, file a Form S-3 registration statement under the Securities Act covering all Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within twenty (20) days of the date the Demand Notice is given, and in each case, subject to the limitations of Sections 2.1(c) and 2.3.

(c) Notwithstanding the foregoing obligations, if the Company furnishes to Holders requesting a registration pursuant to this Section 2.1 a certificate signed by the Company's chief executive officer stating that in the good faith judgment of the Company's Board of Directors it would be materially detrimental to the Company and its stockholders for such registration statement to either become effective or remain effective for as long as such registration statement otherwise would be required to remain effective, because such action would (i) materially interfere with a significant acquisition, corporate reorganization, or other similar transaction involving the Company; (ii) require premature disclosure of material information that the Company has a bona fide business purpose for preserving as confidential; or (iii) render the Company unable to comply with requirements under the Securities Act or Exchange Act, then the Company shall have the right to defer taking action with respect to such filing for a period of not more than sixty (60) days after the request of the Initiating Holders is given; provided, however, that the Company may not invoke this right more than once in any twelve (12) month period; and provided further that the Company shall not register any securities for its own account or that of any other stockholder during such sixty (60) day period other than an Excluded Registration.

(d) The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Section 2.1(a)(i) during the period that is sixty (60) days before the Company's good faith estimate of the date of filing of, and ending on a date that is one hundred eighty (180) days after the effective date of, a Company-initiated registration, provided that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective; (ii) after the Company has effected one registration pursuant to Section 2.1(a); or (iii) if the Initiating Holders propose to dispose of shares of Registrable Securities that may be immediately registered on Form S-3 pursuant to a request made pursuant to Section 2.1(b). The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Section 2.1(b) (i) during the period that is thirty (30) days before the Company's good faith estimate of the date of filing of, and ending on a date that is ninety (90) days after the effective date of, a Company-initiated registration, provided that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective; or (ii) if the Company has effected two registrations pursuant to Section 2.1(b) within the twelve (12) month period immediately preceding the date of such request. A registration shall not be counted as "effected" for purposes of this Section 2.1(d) until such time as the applicable registration statement has been declared effective by the SEC, unless the Initiating Holders withdraw their request for such registration, elect not to pay the registration expenses therefor, and forfeit their right to one demand registration statement pursuant to Section 2.6, in which case such withdrawn registration statement shall be counted as "effected" for purposes of this Section 2.1(d).

2.2 Company Registration. If the Company proposes to register (including, for this purpose, a registration effected by the Company for stockholders other than the Holders) any of its Common Stock under the Securities Act in connection with the public offering of such securities solely for cash (other than in an Excluded Registration), the Company shall, at such time, promptly give each Holder notice of such registration. Upon the request of each Holder given within twenty (20) days after such notice is given by the Company, the Company shall, subject to the provisions of Section 2.3, cause to be registered all of the Registrable Securities that each such Holder has requested to be included in such registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Section 2.2 before the effective date of such registration, whether or not any Holder has elected to include Registrable Securities in such registration. The expenses (other than Selling Expenses) of such withdrawn registration shall be borne by the Company in accordance with Section 2.6.

2.3 Underwriting Requirements.

(a) If, pursuant to Section 2.1, the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to Section 2.1, and the Company shall include such information in the Demand Notice. The underwriter(s) will be selected by the Company and shall be reasonably acceptable to a majority in interest of the Initiating Holders. In such event, the right of any Holder to include such Holder's Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the

inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall (together with the Company as provided in Section 2.4(e)) enter into an underwriting agreement in customary form with the underwriter(s) selected for such underwriting. Notwithstanding any other provision of this Section 2.3, if the managing underwriter(s) advise(s) the Initiating Holders in writing that marketing factors require a limitation on the number of shares to be underwritten, then the Initiating Holders shall so advise all Holders of Registrable Securities that otherwise would be underwritten pursuant hereto, and the number of Registrable Securities that may be included in the underwriting shall be allocated among such Holders of Registrable Securities, including the Initiating Holders, in proportion (as nearly as practicable) to the number of Registrable Securities owned by each Holder or in such other proportion as shall mutually be agreed to by all such selling Holders; provided, however, that the number of Registrable Securities held by the Holders to be included in such underwriting shall not be reduced unless all other securities are first entirely excluded from the underwriting. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest one hundred (100) shares.

(b) In connection with any offering involving an underwriting of shares of the Company's capital stock pursuant to Section 2.2, the Company shall not be required to include any of the Holders' Registrable Securities in such underwriting unless the Holders accept the terms of the underwriting as agreed upon between the Company and its underwriters, and then only in such quantity as the underwriters in their sole discretion determine will not jeopardize the success of the offering by the Company. If the total number of securities, including Registrable Securities, requested by stockholders to be included in such offering exceeds the number of securities to be sold (other than by the Company) that the underwriters in their reasonable discretion determine is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Securities, which the underwriters and the Company in their sole discretion determine will not jeopardize the success of the offering. If the underwriters determine that less than all of the Registrable Securities requested to be registered can be included in such offering, then the Registrable Securities that are included in such offering shall be allocated among the selling Holders in proportion (as nearly as practicable to) the number of Registrable Securities owned by each selling Holder or in such other proportions as shall mutually be agreed to by all such selling Holders. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest one hundred (100) shares. Notwithstanding the foregoing, in no event shall (i) the number of Registrable Securities included in the offering be reduced unless all other securities (other than securities to be sold by the Company) are first entirely excluded from the offering, or (ii) the number of Registrable Securities included in the offering be reduced below twenty percent (20%) of the total number of securities included in such offering, unless such offering is the IPO, in which case the selling Holders may be excluded further if the underwriters make the determination described above and no other stockholder's securities are included in such offering For purposes of the provision in this Section 2.3(b) concerning apportionment, for any selling Holder that is a partnership, limited liability company, or corporation, the partners, members, retired partners, retired members, stockholders, and Affiliates of such Holder, or the estates and Immediate Family Members of any such partners, retired partners, members, and retired members and any trusts for the benefit of any of the foregoing Persons, shall be deemed to be a single "selling Holder," and any pro rata reduction with respect to such "selling Holder" shall be based upon the aggregate number of Registrable Securities owned by all Persons included in such "selling Holder," as defined in this sentence.

(c) For purposes of Section 2.1, a registration shall not be counted as "effected" if, as a result of an exercise of the underwriter's cutback provisions in Section 2.3(a), fewer than fifty percent (50%) of the total number of Registrable Securities that Holders have requested to be included in such registration statement are actually included.

2.4 Obligations of the Company. Whenever required under this Section 2 to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use its commercially reasonable efforts to cause such registration statement to become effective and, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for a period of up to one hundred twenty (120) days or, if earlier, until the distribution contemplated in the registration statement has been completed; provided, however, that (i) such one hundred twenty (120) day period shall be extended for a period of time equal to the period the Holder refrains, at the request of an underwriter of Common Stock (or other securities) of the Company, from selling any securities included in such registration, and (ii) in the case of any registration of Registrable Securities on Form S-3 that are intended to be offered on a continuous or delayed basis, subject to compliance with applicable SEC rules, such one hundred twenty (120) day period shall be extended for up to an additional 120 days, if necessary, to keep the registration statement effective until all such Registrable Securities are sold;

(b) prepare and file with the SEC such amendments and supplements to such registration statement, and the prospectus used in connection with such registration statement, as may be necessary to comply with the Securities Act in order to enable the disposition of all securities covered by such registration statement;

(c) furnish to the selling Holders such numbers of copies of a prospectus, including a preliminary prospectus, as required by the Securities Act, and such other documents as the Holders may reasonably request in order to facilitate their disposition of their Registrable Securities;

(d) use its commercially reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or blue-sky laws of such jurisdictions as shall be reasonably requested by the selling Holders; provided that the Company shall not be required to qualify to do business or to file a general consent to service of process in any such states or jurisdictions, unless the Company is already subject to service in such jurisdiction and except as may be required by the Securities Act;

(e) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the underwriter(s) of such offering;

(f) use its commercially reasonable efforts to cause all such Registrable Securities covered by such registration statement to be listed on a national securities exchange or trading system and each securities exchange and trading system (if any) on which similar securities issued by the Company are then listed;

(g) provide a transfer agent and registrar for all Registrable Securities registered pursuant to this Agreement and provide a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration;

(h) promptly make available for inspection by the selling Holders, any managing underwriter(s) participating in any disposition pursuant to such registration statement, and any attorney or accountant or other agent retained by any such underwriter or selected by the selling Holders, all financial and other records, pertinent corporate documents, and properties of the Company, and cause the Company's officers, directors, employees, and independent accountants to supply all information reasonably requested by any such seller, underwriter, attorney, accountant, or agent, in each case, as necessary or advisable to verify the accuracy of the information in such registration statement and to conduct appropriate due diligence in connection therewith;

(i) notify each selling Holder, promptly after the Company receives notice thereof, of the time when such registration statement has been declared effective or a supplement to any prospectus forming a part of such registration statement has been filed; and

(j) after such registration statement becomes effective, notify each selling Holder of any request by the SEC that the Company amend or supplement such registration statement or prospectus.

In addition, the Company shall ensure that, at all times after any registration statement covering a public offering of securities of the Company under the Securities Act shall have become effective, its insider trading policy shall provide that the Company's directors may implement a trading program under Rule 10b5-1 of the Exchange Act.

2.5 Furnish Information. It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 2 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as is reasonably required to effect the registration of such Holder's Registrable Securities.

2.6 Expenses of Registration. All expenses (other than Selling Expenses) incurred in connection with registrations, filings, or qualifications pursuant to Section 2, including all registration, filing, and qualification fees; printers' and accounting fees; fees and disbursements of counsel for the Company; and the reasonable fees and disbursements of one counsel for the selling Holders ("**Selling Holder Counsel**"), shall be borne and paid by the Company; provided, however, that the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 2.1 if the registration request is subsequently withdrawn at the request of the Holders of a majority of the Registrable Securities to be registered (in which

case all selling Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be included in the withdrawn registration), unless the Holders of a majority of the Registrable Securities agree to forfeit their right to one registration pursuant to Sections 2.1(a) or 2.1(b) as the case may be; provided further that if, at the time of such withdrawal, the Holders shall have learned of a material adverse change in the condition, business, or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness after learning of such information then the Holders shall not be required to pay any of such expenses and shall not forfeit their right to one registration pursuant to Sections 2.1(a) or 2.1(b). All Selling Expenses relating to Registrable Securities registered pursuant to this Section 2 shall be borne and paid by the Holders pro rata on the basis of the number of Registrable Securities registered on their behalf.

2.7 Delay of Registration. No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any registration pursuant to this Agreement as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 2.

2.8 Indemnification. If any Registrable Securities are included in a registration statement under this Section 2:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each selling Holder, and the partners, members, officers, directors, and stockholders of each such Holder; legal counsel and accountants for each such Holder; any underwriter (as defined in the Securities Act) for each such Holder; and each Person, if any, who controls such Holder or underwriter within the meaning of the Securities Act or the Exchange Act, against any Damages, and the Company will pay to each such Holder, underwriter, controlling Person, or other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 2.8(a) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Company, which consent shall not be unreasonably withheld, nor shall the Company be liable for any Damages to the extent that they arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of any such Holder, underwriter, controlling Person, or other aforementioned Person expressly for use in connection with such registration.

(b) To the extent permitted by law, each selling Holder, severally and not jointly, will indemnify and hold harmless the Company, and each of its directors, each of its officers who has signed the registration statement, each Person (if any), who controls the Company within the meaning of the Securities Act, legal counsel and accountants for the Company, any underwriter (as defined in the Securities Act), any other Holder selling securities in such registration statement, and any controlling Person of any such underwriter or other Holder, against any Damages, in each case only to the extent that such Damages arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of such selling Holder expressly for use in connection with such registration; and each such selling Holder will pay to the Company and each other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any

claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 2.8(b) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Holder, which consent shall not be unreasonably withheld; and provided further that in no event shall the aggregate amounts payable by any Holder by way of indemnity or contribution under Sections 2.8(b) and 2.8(d) exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of fraud or willful misconduct by such Holder.

(c) Promptly after receipt by an indemnified party under this Section 2.8 of notice of the commencement of any action (including any governmental action) for which a party may be entitled to indemnification hereunder, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 2.8, give the indemnifying party notice of the commencement thereof. The indemnifying party shall have the right to participate in such action and, to the extent the indemnifying party so desires, participate jointly with any other indemnifying party to which notice has been given, and to assume the defense thereof with counsel mutually satisfactory to the parties; provided, however, that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such action. The failure to give notice to the indemnifying party within a reasonable time of the commencement of any such action shall relieve such indemnifying party of any liability to the indemnified party under this Section 2.8, to the extent that such failure materially prejudices the indemnifying party's ability to defend such action. The failure to give notice to the indemnifying party will not relieve it of any liability that it may have to any indemnified party otherwise than under this Section 2.8.

(d) To provide for just and equitable contribution to joint liability under the Securities Act in any case in which either: (i) any party otherwise entitled to indemnification hereunder makes a claim for indemnification pursuant to this Section 2.8 but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such indemnification may not be enforced in such case, notwithstanding the fact that this Section 2.8 provides for indemnification in such case, or (ii) contribution under the Securities Act may be required on the part of any party hereto for which indemnification is provided under this Section 2.8, then, and in each such case, such parties will contribute to the aggregate losses, claims, damages, liabilities, or expenses to which they may be subject (after contribution from others) in such proportion as is appropriate to reflect the relative fault of each of the indemnifying party and the indemnified party in connection with the statements, omissions, or other actions that resulted in such loss, claim, damage, liability, or expense, as well as to reflect any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or allegedly untrue statement of a material fact, or the omission or alleged omission of a material fact, relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information, and opportunity to correct or prevent such statement or omission; provided,

however, that, in any such case (x) no Holder will be required to contribute any amount in excess of the public offering price of all such Registrable Securities offered and sold by such Holder pursuant to such registration statement, and (y) no Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation; and provided further that in no event shall a Holder's liability pursuant to this Section 2.8(d), when combined with the amounts paid or payable by such Holder pursuant to Section 2.8(b), exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of willful misconduct or fraud by such Holder.

(e) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with the underwritten public offering are in conflict with the foregoing provisions, the provisions in the underwriting agreement shall control.

(f) Unless otherwise superseded by an underwriting agreement entered into in connection with the underwritten public offering, the obligations of the Company and Holders under this Section 2.8 shall survive the completion of any offering of Registrable Securities in a registration under this Section 2, and otherwise shall survive the termination of this Agreement.

2.9 Reports Under Exchange Act. With a view to making available to the Holders the benefits of SEC Rule 144 and any other rule or regulation of the SEC that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company shall:

(a) make and keep available adequate current public information, as those terms are understood and defined in SEC Rule 144, at all times after the effective date of the registration statement filed by the Company for the IPO;

(b) use commercially reasonable efforts to file with the SEC in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act (at any time after the Company has become subject to such reporting requirements); and

(c) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (i) to the extent accurate, a written statement by the Company that it has complied with the reporting requirements of SEC Rule 144 (at any time after ninety (90) days after the effective date of the registration statement filed by the Company for the IPO), the Securities Act, and the Exchange Act (at any time after the Company has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time after the Company so qualifies); and (ii) such other information as may be reasonably requested in availing any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration (at any time after the Company has become subject to the reporting requirements under the Exchange Act) or pursuant to Form S-3 (at any time after the Company so qualifies to use such form).

2.10 Limitations on Subsequent Registration Rights. From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders of at least sixty percent (60%) of the Registrable Securities then outstanding, enter into any agreement with any holder or prospective holder of any securities of the Company that would allow such holder or prospective holder (a) to include such securities in any registration unless, under the terms of such agreement, such holder or prospective holder may include such securities in any such registration only to the extent that the inclusion of such securities will not reduce the number of the Registrable Securities of the Holders that are included; or (b) to initiate a demand for registration of any securities held by such holder or prospective holder; provided that this limitation shall not apply to any additional Investor who becomes a party to this Agreement in accordance with Section 6.9.

2.11 "Market Stand-off" Agreement. Each Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the registration by the Company of shares of its Common Stock or any other equity securities under the Securities Act on a registration statement on Form S-1 or Form S-3, and ending on the date specified by the Company and the managing underwriter (such period not to exceed one hundred eighty (180) days in the case of the IPO, or such other period as may be requested by the Company or an underwriter to accommodate regulatory restrictions on (1) the publication or other distribution of research reports, and (2) analyst recommendations and opinions, including, but not limited to, the restrictions contained in FINRA Rule 2711(f)(4) or NYSE Rule 472(f)(4), or any successor provisions or amendments thereto, or ninety (90) days in the case of any registration other than the IPO, or such other period as may be requested by the Company or an underwriter to accommodate regulatory restrictions on (1) the publication or other distribution of research reports and (2) analyst recommendations and opinions, including, but not limited to, the restrictions contained in FINRA Rule 2711(f)(4) or NYSE Rule 472(f)(4), or any successor provisions or amendments thereto), (i) lend; offer; pledge; sell; contract to sell; sell any option or contract to purchase; purchase any option or contract to sell; grant any option, right, or warrant to purchase; or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable (directly or indirectly) for Common Stock held immediately before the effective date of the registration statement for such offering, or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of such securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or other securities, in cash, or otherwise. The foregoing provisions of this Section 2.11 shall not apply to (a) the sale of any shares to an underwriter pursuant to an underwriting agreement, or (b) the transfer of any shares to any trust for the direct or indirect benefit of the Holder or the immediate family of the Holder provided that the trustee of the trust agrees to be bound in writing by the restrictions set forth herein, or (c) the transfer any shares owned by a Holder in the Company to its Affiliates, provided that the Affiliate of the Holder agrees to be bound in writing by the restrictions set forth herein, or (d) shares purchased by a Holder in the open market, and provided further that any such transfer in case of (a) or (b) shall not involve a disposition for value. This Section 2.11 shall be applicable to the Holders only if all officers and directors are subject to the same restrictions and the Company uses commercially reasonable efforts to obtain a similar agreement from all stockholders individually owning more than one percent (1%) of the Company's outstanding Common Stock (after giving effect to conversion into Common Stock of all outstanding Preferred Stock). The underwriters in connection with such

registration are intended third-party beneficiaries of this Section 2.11 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto. Each Holder further agrees to execute such agreements as may be reasonably requested by the underwriters in connection with such registration that are consistent with this Section 2.11 or that are necessary to give further effect thereto. Any discretionary waiver or termination of the restrictions of any or all of such agreements by the Company or the underwriters shall apply pro rata to all Holders subject to such agreements, based on the number of shares subject to such agreements.

2.12 Restrictions on Transfer.

(a) The Preferred Stock and the Registrable Securities shall not be sold, pledged, or otherwise transferred, and the Company shall not recognize and shall issue stop-transfer instructions to its transfer agent with respect to any such sale, pledge, or transfer, except upon the conditions specified in this Agreement, which conditions are intended to ensure compliance with the provisions of the Securities Act. A transferring Holder will cause any proposed purchaser, pledgee, or transferee of the Preferred Stock and the Registrable Securities held by such Holder to agree to take and hold such securities subject to the provisions and upon the conditions specified in this Agreement.

(b) Each certificate, instrument, or book entry representing (i) the Preferred Stock, (ii) the Registrable Securities, and (iii) any other securities issued in respect of the securities referenced in clauses (i) and (ii), upon any stock split, stock dividend, recapitalization, merger, consolidation, or similar event, shall (unless otherwise permitted by the provisions of Section 2.12(c)) be notated with a legend substantially in the following form:

THE SECURITIES REPRESENTED HEREBY HAVE BEEN ACQUIRED FOR INVESTMENT AND HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933. SUCH SHARES MAY NOT BE SOLD, PLEDGED, OR TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR A VALID EXEMPTION FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS OF SAID ACT.

THE SECURITIES REPRESENTED HEREBY MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY.

The Holders consent to the Company making a notation in its records and giving instructions to any transfer agent of the Restricted Securities in order to implement the restrictions on transfer set forth in this Section 2.12.

(c) The holder of such Restricted Securities, by acceptance of ownership thereof, agrees to comply in all respects with the provisions of this Section 2. Before any proposed sale, pledge, or transfer of any Restricted Securities, unless there is in effect a registration statement under the Securities Act covering the proposed transaction, the Holder thereof shall give notice to the Company of such Holder's intention to effect such sale, pledge, or

transfer. Each such notice shall describe the manner and circumstances of the proposed sale, pledge, or transfer in sufficient detail and, if reasonably requested by the Company, shall be accompanied at such Holder's expense by either (i) a written opinion of legal counsel who shall, and whose legal opinion shall, be reasonably satisfactory to the Company, addressed to the Company, to the effect that the proposed transaction may be effected without registration under the Securities Act; (ii) a "no action" letter from the SEC to the effect that the proposed sale, pledge, or transfer of such Restricted Securities without registration will not result in a recommendation by the staff of the SEC that action be taken with respect thereto; or (iii) any other evidence reasonably satisfactory to counsel to the Company to the effect that the proposed sale, pledge, or transfer of the Restricted Securities may be effected without registration under the Securities Act, whereupon the Holder of such Restricted Securities shall be entitled to sell, pledge, or transfer such Restricted Securities in accordance with the terms of the notice given by the Holder to the Company. The Company will not require such a legal opinion or "no action" letter (x) in any transaction in compliance with SEC Rule 144; or (y) in any transaction in which such Holder distributes Restricted Securities to an Affiliate of such Holder for no consideration; provided that each transferee agrees in writing to be subject to the terms of this Section 2.12. Each certificate, instrument, or book entry representing the Restricted Securities transferred as above provided shall be notated with, except if such transfer is made pursuant to SEC Rule 144, the appropriate restrictive legend set forth in Section 2.12(b), except that such certificate instrument, or book entry shall not be notated with such restrictive legend if, in the opinion of counsel for such Holder and the Company, such legend is not required in order to establish compliance with any provisions of the Securities Act.

2.13 Termination of Registration Rights. The right of any Holder to request registration or inclusion of Registrable Securities in any registration pursuant to Sections 2.1 or 2.2 shall terminate upon the earliest to occur of:

(a) the closing of a Deemed Liquidation Event, as such term is defined in the Company's Certificate of Incorporation;

(b) such time as Rule 144 or another similar exemption under the Securities Act is available for the sale of all of such Holder's shares without limitation during a three-month period without registration; and

(c) the fifth anniversary of the IPO.

3. Information and Observer Rights.

3.1 Delivery of Financial Statements. The Company shall deliver to each Major Investor, provided that the Board of Directors has not reasonably determined that such Major Investor is a Competitor:

(a) as soon as practicable, but in any event within one hundred twenty (120) days after the end of each fiscal year of the Company (i) a balance sheet as of the end of such year, (ii) statements of income and of cash flows for such year, and a comparison between (x) the actual amounts as of and for such fiscal year and (y) the comparable amounts for the prior year and as included in the Budget (as defined in Section 3.1(d)) for such year, with an explanation

of any material differences between such amounts and a schedule as to the sources and applications of funds for such year, and (iii) a statement of stockholders' equity as of the end of such year, all such financial statements audited and certified by independent public accountants of nationally recognized standing selected by the Company, unless the holders of at least sixty percent (60%) of the Preferred Stock consent otherwise in writing;

(b) as soon as practicable, but in any event within forty-five (45) days after the end of each of the first three (3) quarters of each fiscal year of the Company, unaudited statements of income and cash flows for such fiscal quarter, and an unaudited balance sheet as of the end of such fiscal quarter, all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments; and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(c) as soon as practicable, but in any event within forty-five (45) days after the end of each of the first three (3) quarters of each fiscal year of the Company, a statement showing the number of shares of each class and series of capital stock and securities convertible into or exercisable for shares of capital stock outstanding at the end of the period, the Common Stock issuable upon conversion or exercise of any outstanding securities convertible or exercisable for Common Stock and the exchange ratio or exercise price applicable thereto, and the number of shares of issued stock options and stock options not yet issued but reserved for issuance, if any, all in sufficient detail as to permit the Major Investors to calculate their respective percentage equity ownership in the Company, and certified by the chief financial officer or chief executive officer of the Company as being true, complete, and correct;

(d) as soon as practicable, but in any event thirty (30) days before the end of each fiscal year, a budget and business plan for the next fiscal year (collectively, the "**Budget**"), prepared on a monthly basis, including balance sheets, income statements, and statements of cash flow for such months and, promptly after prepared, any other budgets or revised budgets prepared by the Company;

(e) with respect to the financial statements called for in Section 3.1(a), Section 3.1(b), from and after the date the Company shall have hired a full time chief financial officer, an instrument executed by the chief financial officer of the Company certifying that such financial statements were prepared in accordance with GAAP consistently applied with prior practice for earlier periods (except as otherwise set forth in Section 3.1(b)) and fairly present the financial condition of the Company and its results of operation for the periods specified therein; and

(f) such other information relating to the financial condition, business, prospects, or corporate affairs of the Company as any Major Investor may from time to time reasonably request; provided, however, that the Company shall not be obligated under this Section 3.1 to provide information (i) that the Company reasonably determines in good faith to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in a form acceptable to the Company); or (ii) the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

If, for any period, the Company has any subsidiary whose accounts are consolidated with those of the Company, then in respect of such period the financial statements delivered pursuant to the foregoing sections shall be the consolidated and consolidating financial statements of the Company and all such consolidated subsidiaries.

Notwithstanding anything else in this Section 3.1 to the contrary, the Company may cease providing the information set forth in this Section 3.1 during the period starting with the date sixty (60) days before the Company's good-faith estimate of the date of filing of a registration statement if it reasonably concludes it must do so to comply with the SEC rules applicable to such registration statement and related offering; provided that the Company's covenants under this Section 3.1 shall be reinstated at such time as the Company is no longer actively employing its commercially reasonable efforts to cause such registration statement to become effective.

3.2 Inspection. The Company shall permit each Major Investor (provided that the Board of Directors has not reasonably determined that such Major Investor is a Competitor), at such Major Investor's expense, to visit and inspect the Company's properties; examine its books of account and records; and discuss the Company's affairs, finances, and accounts with its officers, during normal business hours of the Company as may be reasonably requested by the Major Investor; provided, however, that the Company shall not be obligated pursuant to this Section 3.2 to provide access to any information that it reasonably and in good faith considers to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in form acceptable to the Company) or the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

3.3 Observer Rights. As long as each of F-Prime Capital Partners Healthcare Fund V LP ("**F-Prime**") and ARCH Venture Fund IX, L.P. ("**ARCH**") owns shares of the Series A Preferred Stock (or shares of Common Stock issued upon conversion thereof), and as long as HH Beam Holdings LLC or its Affiliates ("**Hillhouse**") owns shares of Series B Preferred Stock (or shares of Common Stock issued upon conversion thereof), the Company shall invite a representative of each of F-Prime, ARCH and Hillhouse (together, the "**Board Observers**") to attend all meetings of its Board of Directors in a nonvoting observer capacity and, in this respect, shall give such representative copies of all notices, minutes, consents, and other materials that it provides to its directors; provided, however, that such representative shall agree to hold in confidence and trust and to act in a fiduciary manner with respect to all information so provided; and provided further, that the Company reserves the right to withhold any information and to exclude such representative from any meeting or portion thereof if access to such information or attendance at such meeting could adversely affect the attorney-client privilege between the Company and its counsel or result in disclosure of trade secrets or a conflict of interest, or if such Investor or its representative is a Competitor.

3.4 Termination of Information and Observer Rights. The covenants set forth in Section 3.1, Section 3.2, and Section 3.3 shall terminate and be of no further force or effect (a) immediately before the consummation of the IPO, or (b) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, or (c) upon a Deemed Liquidation Event, as such term is defined in the Company's Certificate of Incorporation, whichever event occurs first.

3.5 Confidentiality. Each Investor agrees that such Investor will keep confidential and will not disclose, divulge, or use for any purpose (other than to monitor its investment in the Company) any confidential information obtained from the Company pursuant to the terms of this Agreement (including notice of the Company's intention to file a registration statement), unless such confidential information (a) is known or becomes known to the public in general (other than as a result of a breach of this Section 3.5 by such Investor), (b) is or has been independently developed or conceived by the Investor without use of the Company's confidential information, or (c) is or has been made known or disclosed to the Investor by a third party without a breach of any obligation of confidentiality such third party may have to the Company; provided, however, that an Investor may disclose confidential information (d) to its attorneys, accountants, consultants, and other professionals to the extent necessary to obtain their services in connection with monitoring its investment in the Company; (e) to any prospective purchaser of any Registrable Securities from such Investor, if such prospective purchaser agrees to be bound by the provisions of this Section 3.5; (f) to any existing or prospective Affiliate, partner, member, stockholder, or wholly owned subsidiary of such Investor in the ordinary course of business, provided that such Investor informs such Person that such information is confidential and directs such Person to maintain the confidentiality of such information; or (g) as may otherwise be required by law, provided that the Investor promptly notifies the Company of such disclosure and takes reasonable steps to minimize the extent of any such required disclosure.

4. Rights to Future Stock Issuances.

4.1 Right of First Offer. Subject to the terms and conditions of this Section 4.1 and applicable securities laws, if the Company proposes to offer or sell any New Securities, the Company shall first offer such New Securities to each Major Investor. A Major Investor shall be entitled to apportion the right of first offer hereby granted to it in such proportions as it deems appropriate, among itself and its Affiliates; provided that each such Affiliate agrees to enter into this Agreement and each of (i) the Amended and Restated Voting Agreement and (ii) the Amended and Restated Right of First Refusal and Co-Sale Agreement of even date herewith among the Company, the Investors and the other parties named therein, as an "Investor" under each such agreement.

(a) The Company shall give notice (the "**Offer Notice**") to each Major Investor, stating (i) its bona fide intention to offer such New Securities, (ii) the number of such New Securities to be offered, and (iii) the price and terms, if any, upon which it proposes to offer such New Securities.

(b) By notification to the Company within twenty (20) days after the Offer Notice is given, each Major Investor may elect to purchase or otherwise acquire, at the price and on the terms specified in the Offer Notice, up to that portion of such New Securities which equals the proportion that the Common Stock then held by such Major Investor (including all shares of Common Stock then issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and any other Derivative Securities then held by such Major Investor) bears to the total Common Stock of the Company then outstanding (assuming full conversion and/or exercise, as applicable, of all Preferred Stock and other Derivative Securities). At the expiration of such twenty (20) day period, the Company shall promptly notify each Major Investor that elects to purchase or acquire all the shares available to it (each, a "**Fully Exercising**

Investor") of any other Major Investor's failure to do likewise. During the ten (10) day period commencing after the Company has given such notice, each Fully Exercising Investor may, by giving notice to the Company, elect to purchase or acquire, in addition to the number of shares specified above, up to that portion of the New Securities for which Major Investors were entitled to subscribe but that were not subscribed for by the Major Investors which is equal to the proportion that the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of Preferred Stock and any other Derivative Securities then held, by such Fully Exercising Investor bears to the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and any other Derivative Securities then held, by all Fully Exercising Investors who wish to purchase such unsubscribed shares. The closing of any sale pursuant to this Section 4.1(b) shall occur within the later of one hundred and twenty (120) days of the date that the Offer Notice is given and the date of initial sale of New Securities pursuant to Section 4.1(c) or such later date as is required to obtain any required regulatory approvals.

(c) If all New Securities referred to in the Offer Notice are not elected to be purchased or acquired as provided in Section 4.1(b), the Company may, during the ninety (90) day period following the expiration of the periods provided in Section 4.1(b), offer and sell the remaining unsubscribed portion of such New Securities to any Person or Persons at a price not less than, and upon terms no more favorable to the offeree than, those specified in the Offer Notice. If the Company does not enter into an agreement for the sale of the New Securities within such period, or if such agreement is not consummated within thirty (30) days of the execution thereof, the right provided hereunder shall be deemed to be revived and such New Securities shall not be offered unless first reoffered to the Major Investors in accordance with this Section 4.1.

(d) The right of first offer in this Section 4.1 shall not be applicable to (i) Exempted Securities (as defined in the Company's Certificate of Incorporation); (ii) shares of Common Stock issued in the IPO; and (iii) the issuance of shares of Series B Preferred Stock to Additional Purchasers pursuant to Section 1.2(b) of the Purchase Agreement.

4.2 Termination. The covenants set forth in Section 4.1 shall terminate and be of no further force or effect (a) immediately before the consummation of the IPO, (b) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, or (c) upon a Deemed Liquidation Event, as such term is defined in the Company's Certificate of Incorporation, whichever event occurs first.

5. Additional Covenants.

5.1 Insurance. The Company shall maintain, from financially sound and reputable insurers, Directors and Officers liability insurance, each in an amount and on terms and conditions satisfactory to the Board of Directors, and will use commercially reasonable efforts to cause such insurance policies to be maintained until such time as the Board of Directors determines that such insurance should be discontinued.

5.2 Employee Agreements. The Company will cause (a) each person now or hereafter employed by it or by any subsidiary (or engaged by the Company or any subsidiary as a consultant/independent contractor) with access to confidential information and/or trade secrets to enter into a nondisclosure and proprietary rights assignment agreement; and (b) each Key Employee to enter into a one (1) year noncompetition and nonsolicitation agreement, substantially in the form approved by the Board of Directors. In addition, the Company shall not amend, modify, terminate, waive, or otherwise alter, in whole or in part, any of the above- referenced agreements or any restricted stock agreement between the Company and any employee, without the consent of at least three (3) Preferred Directors (or all Preferred Directors then in office if there are at the time fewer than three (3) Preferred Directors on the Board of Directors of the Corporation).

5.3 Employee Stock. Unless otherwise approved by the Board of Directors, including at least three (3) Preferred Directors (or all Preferred Directors then in office if there are at the time fewer than three (3) Preferred Directors on the Board of Directors of the Corporation), all future employees and consultants of the Company who purchase, receive options to purchase, or receive awards of shares of the Company's capital stock after the date hereof shall be required to execute restricted stock or option agreements, as applicable, providing for (a) vesting of shares over a four (4) year period, with the first twenty-five percent (25%) of such shares vesting following twelve (12) months of continued employment or service, and the remaining shares vesting in equal monthly installments over the following thirty-six (36) months, and (b) a market stand-off provision substantially similar to that in Section 2.11. In addition, unless otherwise approved by the Board of Directors, including at least three (3) Preferred Directors (or all Preferred Directors then in office if there are at the time fewer than three (3) Preferred Directors on the Board of Directors of the Corporation), the Company shall retain a "right of first refusal" on employee transfers until the Company's IPO and shall have the right to repurchase unvested shares at cost upon termination of employment of a holder of restricted stock.

5.4 Matters Requiring Investor Director Approval. So long as the holders of Preferred Stock are entitled to elect one or more Preferred Directors, the Company hereby covenants and agrees with each of the Investors that it shall not, without approval of the Board of Directors, which approval must include the affirmative vote of at least three (3) Preferred Directors (or all Preferred Directors then in office if there are at the time fewer than three (3) Preferred Directors on the Board of Directors of the Corporation):

(a) make, or permit any subsidiary to make, any loan or advance to, or own any stock or other securities of, any subsidiary or other individual, corporation, partnership, or other entity except to an entity that is wholly owned by the Company;

(b) make, or permit any subsidiary to make, any loan or advance to any Person, including, without limitation, any employee or director of the Company or any subsidiary, except advances and similar expenditures in the ordinary course of business or under the terms of an employee stock or option plan approved by the Board of Directors;

(c) guarantee, directly or indirectly, or permit any subsidiary to guarantee, directly or indirectly, any indebtedness except for trade accounts of the Company or any subsidiary arising in the ordinary course of business;

(d) make any investment inconsistent with any investment policy approved by the Board of Directors;

(e) incur any aggregate indebtedness in excess of $100,000 that is not already included in a budget approved by the Board of Directors, other than trade credit incurred in the ordinary course of business;

(f) otherwise enter into or be a party to any transaction with any director, officer, shareholder or employee of the Company or any "associate" (as defined in Rule 12b-2 promulgated under the Exchange Act) of any such Person, including without limitation any "management bonus" or similar plan providing payments to employees in connection with a Deemed Liquidation Event, as such term is defined in the Company's Certificate of Incorporation, except for transactions contemplated by this Agreement, the Purchase Agreement; transactions resulting in payments to or by the Company in an aggregate amount less than $60,000 per year; or transactions made in the ordinary course of business and pursuant to reasonable requirements of the Company's business and upon fair and reasonable terms that are approved by a majority of the Board of Directors;

(g) adopt or amend any employee equity incentive plans or any other employee equity incentive plans, including any increase in the aggregate number of shares issuable pursuant thereto;

(h) hire, terminate, or change the compensation of the executive officers, including approving any option grants or stock awards to executive officers;

(i) change the principal business of the Company, enter new lines of business, or exit the current line of business;

(j) adopt or amend any budget or business plan;

(k) acquire, sell, assign, license, pledge, or encumber any material assets, technology or intellectual property, other than licenses granted in the ordinary course of business; or

(l) enter into any corporate strategic relationship, including any joint venture or partnership, involving the payment, contribution, or assignment by the Company or to the Company of money or assets greater than $100,000.

5.5 Board Matters. The Company shall reimburse the nonemployee directors and the Board Observers for all reasonable out-of-pocket travel expenses incurred (consistent with the Company's travel policy) in connection with attending meetings of the Board of Directors. The Company shall cause to be established, as soon as practicable after such request, and will maintain, an audit and compensation committee, each of which shall consist solely of non-management directors. Each non-employee director shall be entitled in such person's discretion to be a member of any Board committee.

5.6 Successor Indemnification. If the Company or any of its successors or assignees consolidates with or merges into any other Person and is not the continuing or surviving corporation or entity of such consolidation or merger, then to the extent necessary, proper provision shall be made so that the successors and assignees of the Company assume the obligations of the Company with respect to indemnification of members of the Board of Directors as in effect immediately before such transaction, whether such obligations are contained in the Company's Bylaws, its Certificate of Incorporation, or elsewhere, as the case may be.

5.7 Expenses of Counsel. In the event of a transaction which is a Sale of the Company (as defined in the Amended and Restated Voting Agreement of even date herewith among the Investors and the Company), the reasonable fees and disbursements of one counsel for the Major Investors ("**Investor Counsel**"), in their capacities as stockholders, shall be borne and paid by the Company. At the outset of considering a transaction which, if consummated would constitute a Sale of the Company, the Company shall obtain the ability to share with the Investor Counsel (and such counsel's clients) and shall share the confidential information (including, without limitation, the initial and all subsequent drafts of memoranda of understanding, letters of intent and other transaction documents and related noncompete, employment, consulting and other compensation agreements and plans) pertaining to and memorializing any of the transactions which, individually or when aggregated with others would constitute the Sale of the Company. The Company shall be obligated to share (and cause the Company's counsel and investment bankers to share) such materials when distributed to the Company's executives and/or any one or more of the other parties to such transaction(s). In the event that Investor Counsel deems it appropriate, in its reasonable discretion, to enter into a joint defense agreement or other arrangement to enhance the ability of the parties to protect their communications and other reviewed materials under the attorney client privilege, the Company shall, and shall direct its counsel to, execute and deliver to Investor Counsel and its clients such an agreement in form and substance reasonably acceptable to Investor Counsel. In the event that one or more of the other party or parties to such transactions require the clients of Investor Counsel to enter into a confidentiality agreement and/or joint defense agreement in order to receive such information, then the Company shall share whatever information can be shared without entry into such agreement and shall, at the same time, in good faith work expeditiously to enable Investor Counsel and its clients to negotiate and enter into the appropriate agreement(s) without undue burden to the clients of Investor Counsel.

5.8 Indemnification Matters. The Company hereby acknowledges that one (1) or more of the directors nominated to serve on the Board of Directors by the Investors (each a "**Fund Director**") may have certain rights to indemnification, advancement of expenses and/or insurance provided by one or more of the Investors and certain of their affiliates (collectively, the "**Fund Indemnitors**"). The Company hereby agrees (a) that it is the indemnitor of first resort (*i.e.*, its obligations to any such Fund Director are primary and any obligation of the Fund Indemnitors to advance expenses or to provide indemnification for the same expenses or liabilities incurred by such Fund Director are secondary), (b) that it shall be required to advance the full amount of expenses incurred by such Fund Director and shall be liable for the full amount of all expenses, judgments, penalties, fines and amounts paid in settlement by or on behalf of any such Fund Director to the extent legally permitted and as required by the Company's Certificate of Incorporation or Bylaws of the Company (or any agreement between the Company and such Fund Director), without regard to any rights such Fund Director may have against the Fund Indemnitors, and, (c) that it irrevocably waives, relinquishes and releases the Fund Indemnitors from any and all claims against the Fund Indemnitors for contribution, subrogation or any other recovery of any kind in respect thereof. The Company further agrees that no advancement or payment by the Fund Indemnitors on behalf of any such Fund Director with respect to any claim for which such Fund Director has sought indemnification from the Company shall affect the foregoing and the Fund Indemnitors shall have a right of contribution and/or be subrogated to the extent of such advancement or payment to all of the rights of recovery of such Fund Director against the Company.

5.9 Right to Conduct Activities. The Company hereby agrees and acknowledges that each of Hillhouse, F-Prime and ARCH (together with their Affiliates) is a professional investment fund, and as such invests in numerous portfolio companies, some of which may be deemed competitive with the Company's business (as currently conducted or as currently propose to be conducted). The Company hereby agrees that, to the extent permitted under applicable law, none of Hillhouse, F-Prime and ARCH shall be liable to the Company for any claim arising out of, or based upon, (a) the investment by any of Hillhouse, F-Prime and ARCH in any entity competitive with the Company, or (b) actions taken by any partner, officer or other representative of any of Hillhouse, F-Prime and ARCH to assist any such competitive company, whether or not such action was taken as a member of the board of directors of such competitive company or otherwise, and whether or not such action has a detrimental effect on the Company; provided, however, that the foregoing shall not relieve (x) any of the Investors from liability associated with the unauthorized disclosure of the Company's confidential information obtained pursuant to this Agreement, or (y) any director or officer of the Company from any liability associated with his or her fiduciary duties to the Company.

5.10 Tax Reporting. The Company will comply with any obligation imposed on the Company to make any filing (including any filing on Internal Revenue Service Form 5471) as a result of any interest that the Company holds in a non-U.S. Person or any activities that the Company conducts outside of the U.S. and shall include in such filing any information necessary to obviate (to the extent possible) any similar obligation to which any shareholder would otherwise be subject with respect to such interest or such activity. The Company shall promptly provide each Investor with a copy of any such filing.

5.11 Qualified Small Business Stock. The Company shall use commercially reasonable efforts to cause the shares of Series A Preferred Stock issued pursuant to that certain Series A Preferred Stock Purchase Agreement, dated as of June 28, 2017, by and between the Company and the purchasers listed on Exhibit A thereto, as amended, as well as any shares into which such shares are converted, within the meaning of Section 1202(f) of the Internal Revenue Code (the "Code"), to constitute "qualified small business stock" as defined in Section 1202(c) of the Code; provided, however, that such requirement shall not be applicable if the Board of Directors of the Company determines, in its good-faith business judgment, that such qualification is inconsistent with the best interests of the Company. The Company shall submit to its stockholders (including the Investors) and to the Internal Revenue Service any reports that may be required under Section 1202(d)(1)(C) of the Code and the regulations promulgated thereunder. In addition, within twenty (20) business days after any Investor's written request therefor, the Company shall, at its option, either (i) deliver to such Investor a written statement indicating whether (and what portion of) such Investor's interest in the Company constitutes "qualified small business stock" as defined in Section 1202(c) of the Code or (ii) deliver to such Investor such factual information in the Company's possession as is reasonably necessary to enable such Investor to determine whether (and what portion of) such Investor's interest in the Company constitutes "qualified small business stock" as defined in Section 1202(c) of the Code.

5.12 Termination of Covenants. The covenants set forth in this Section 5, except for Section 5.6, Section 5.8 and Section 5.9 shall terminate and be of no further force or effect (a) immediately before the consummation of the IPO or (b) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, or (c) upon a Deemed Liquidation Event, as such term is defined in the Company's Certificate of Incorporation, whichever event occurs first.

6. Miscellaneous.

6.1 Successors and Assigns. The rights under this Agreement may be assigned (but only with all related obligations) by a Holder to a transferee of Registrable Securities that (a) is an Affiliate of a Holder; (b) is a Holder's Immediate Family Member or trust for the benefit of an individual Holder or one or more of such Holder's Immediate Family Members; or (c) after such transfer, holds at least 300,000 shares of Registrable Securities (subject to appropriate adjustment for stock splits, stock dividends, combinations, and other recapitalizations); provided, however, that (x) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee and the Registrable Securities with respect to which such rights are being transferred; and (y) such transferee agrees in a written instrument delivered to the Company to be bound by and subject to the terms and conditions of this Agreement, including the provisions of Section 2.11. For the purposes of determining the number of shares of Registrable Securities held by a transferee, the holdings of a transferee (1) that is an Affiliate or stockholder of a Holder; (2) who is a Holder's Immediate Family Member; or (3) that is a trust for the benefit of an individual Holder or such Holder's Immediate Family Member shall be aggregated together and with those of the transferring Holder; provided further that all transferees who would not qualify individually for assignment of rights shall have a single attorney-in-fact for the purpose of exercising any rights, receiving notices, or taking any action under this Agreement. The terms and conditions of this Agreement inure to the benefit of and are binding upon the respective successors and permitted assignees of the parties. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assignees any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided herein.

6.2 Governing Law. This Agreement shall be governed by and construed in accordance with the internal laws of the State of Delaware, regardless of the laws that might otherwise govern under applicable principles of conflicts of law.

6.3 Counterparts. This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, *e.g.*, www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

6.4 Titles and Subtitles. The titles and subtitles used in this Agreement are for convenience only and are not to be considered in construing or interpreting this Agreement.

6.5 Notices. All notices and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given upon the earlier of actual receipt or (a) personal delivery to the party to be notified; (b) when sent, if sent by electronic mail during the recipient's normal business hours, and if not sent during normal business hours, then on the recipient's next business day; (c) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid; or (d) one (1) business day after the business day of deposit with a nationally recognized overnight courier, freight prepaid, specifying next-day delivery, with written verification of receipt. All communications shall be sent to the respective parties at their addresses as set forth on Schedule A hereto, or to the principal office of the Company and to the attention of the Chief Executive Officer, in the case of the Company, or to such physical or email address as subsequently modified by written notice given in accordance with this Section 6.5. If notice is given to the Company, a copy (which shall not constitute notice) shall also be sent to Ropes and Gray LLP, 800 Boylston Street, Boston, MA 02199, Attention: Marc A. Rubenstein, Esq.

6.6 Amendments and Waivers. Any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance, and either retroactively or prospectively) only with the written consent of the Company and the Holders of at least sixty percent (60%) of the Registrable Securities then outstanding necessarily including at least one (1) Major Series B Holder (as defined in the Purchase Agreement) in case of any amendment, termination or waiver of powers, preferences or rights of, or any restrictions provided for the benefit of, any holder of shares of Series B Preferred Stock; provided that the Company may in its sole discretion waive compliance with Section 2.12(c) (and the Company's failure to object promptly in writing after notification of a proposed assignment allegedly in violation of Section 2.12(c) shall be deemed to be a waiver); and provided further that any provision hereof may be waived by any waiving party on such party's own behalf, without the consent of any other party. Notwithstanding the foregoing, (a) this Agreement may not be amended or terminated and the observance of any term hereof may not be waived with respect to any Investor without the written consent of such Investor, unless such amendment, termination, or waiver applies to all Investors in the same fashion (it being agreed that a waiver of the provisions of Section 4 with respect to a particular transaction shall be deemed to apply to all Investors in the same fashion if such waiver does so by its terms, notwithstanding the fact that certain Investors may nonetheless, by agreement with the Company, purchase securities in such transaction), (b) the definitions of "Affiliate", "Competitor", Section 3.3 and Section 5.9 shall not amended or waived in a manner adverse to Hillhouse, F-Prime or ARCH without the written consent of such affected party, (c) the definition of "Major Investor" shall not amended or waived without the written consent of the Qualified Lead Investor (as defined in the Purchase Agreement) (if any Qualified Lead Investor then exists), and (d) any requirement herein to obtain the consent or approval of a Major Series B Holder shall not be amended or waived without the written consent of the Qualified Lead Investor (if any Qualified Lead Investor then exists). The Company shall give prompt notice of any amendment or termination hereof or waiver hereunder to any party hereto that did not consent in writing to such amendment, termination, or waiver. Any amendment, termination, or waiver effected in accordance with this Section 6.6 shall be binding on all parties hereto, regardless of whether any such party has consented thereto. No waivers of or exceptions to any term, condition, or provision of this Agreement, in any one or more instances, shall be deemed to be or construed as a further or continuing waiver of any such term, condition, or provision.

6.7 Severability. In case any one or more of the provisions contained in this Agreement is for any reason held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision of this Agreement, and such invalid, illegal, or unenforceable provision shall be reformed and construed so that it will be valid, legal, and enforceable to the maximum extent permitted by law.

6.8 Aggregation of Stock. All shares of Registrable Securities held or acquired by Affiliates shall be aggregated together for the purpose of determining the availability of any rights under this Agreement and such Affiliated persons may apportion such rights as among themselves in any manner they deem appropriate.

6.9 Additional Investors. Notwithstanding anything to the contrary contained herein, if the Company issues additional shares of Preferred Stock after the date hereof, whether pursuant to the Purchase Agreement or otherwise, any purchaser of such shares of Preferred Stock may become a party to this Agreement by executing and delivering an additional counterpart signature page to this Agreement, and thereafter shall be deemed an "Investor" for all purposes hereunder. No action or consent by the Investors shall be required for such joinder to this Agreement by such additional Investor, so long as such additional Investor has agreed in writing to be bound by all of the obligations as an "Investor" hereunder.

6.10 Entire Agreement. This Agreement (including any Schedules and Exhibits hereto) constitutes the full and entire understanding and agreement among the parties with respect to the subject matter hereof, and any other written or oral agreement relating to the subject matter hereof existing between the parties is expressly canceled.

6.11 Dispute Resolution. Any unresolved controversy or claim arising out of or relating to this Agreement, except as (a) otherwise provided in this Agreement, or (b) any such controversies or claims arising out of the Company's intellectual property rights for which a provisional remedy or equitable relief is sought, shall be submitted to arbitration by one arbitrator mutually agreed upon by the parties, and if no agreement can be reached within thirty (30) days after names of potential arbitrators have been proposed by the American Arbitration Association (the "AAA"), then by one arbitrator having reasonable experience in corporate finance transactions of the type provided for in this Agreement and who is chosen by the AAA. The arbitration shall take place in Boston, MA or Wilmington, DE, in accordance with the AAA rules then in effect, and judgment upon any award rendered in such arbitration will be binding and may be entered in any court having jurisdiction thereof. There shall be limited discovery prior to the arbitration hearing as follows: (a) exchange of witness lists and copies of documentary evidence and documents relating to or arising out of the issues to be arbitrated, (b) depositions of all party witnesses, and (c) such other depositions as may be allowed by the arbitrators upon a showing of good cause. Depositions shall be conducted in accordance with the Delaware Code of Civil Procedure, the arbitrator shall be required to provide in writing to the parties the basis for the award or order of such arbitrator, and a court reporter shall record all hearings, with such record constituting the official transcript of such proceedings. Each party will bear its own costs in respect of any disputes arising under this Agreement. Each of the parties to this Agreement consents to personal jurisdiction for any equitable action sought in the U.S. District Court for the District of Delaware or the Court of Chancery of the State of Delaware.

WAIVER OF JURY TRIAL: EACH PARTY HEREBY WAIVES ITS RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON OR ARISING OUT OF THIS AGREEMENT, THE OTHER TRANSACTION DOCUMENTS, THE SECURITIES OR THE SUBJECT MATTER HEREOF OR THEREOF. THE SCOPE OF THIS WAIVER IS INTENDED TO BE ALL-ENCOMPASSING OF ANY AND ALL DISPUTES THAT MAY BE FILED IN ANY COURT AND THAT RELATE TO THE SUBJECT MATTER OF THIS TRANSACTION, INCLUDING, WITHOUT LIMITATION, CONTRACT CLAIMS, TORT CLAIMS (INCLUDING NEGLIGENCE), BREACH OF DUTY CLAIMS, AND ALL OTHER COMMON LAW AND STATUTORY CLAIMS. THIS SECTION HAS BEEN FULLY DISCUSSED BY EACH OF THE PARTIES HERETO AND THESE PROVISIONS WILL NOT BE SUBJECT TO ANY EXCEPTIONS. EACH PARTY HERETO HEREBY FURTHER WARRANTS AND REPRESENTS THAT SUCH PARTY HAS REVIEWED THIS WAIVER WITH ITS LEGAL COUNSEL, AND THAT SUCH PARTY KNOWINGLY AND VOLUNTARILY WAIVES ITS JURY TRIAL RIGHTS FOLLOWING CONSULTATION WITH LEGAL COUNSEL.

6.12 Delays or Omissions. No delay or omission to exercise any right, power, or remedy accruing to any party under this Agreement, upon any breach or default of any other party under this Agreement, shall impair any such right, power, or remedy of such nonbreaching or nondefaulting party, nor shall it be construed to be a waiver of or acquiescence to any such breach or default, or to any similar breach or default thereafter occurring, nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. All remedies, whether under this Agreement or by law or otherwise afforded to any party, shall be cumulative and not alternative.

6.13 Acknowledgment. The Company acknowledges that the Investors are in the business of venture capital investing and therefore review the business plans and related proprietary information of many enterprises, including enterprises which may have products or services which compete directly or indirectly with those of the Company. Nothing in this Agreement shall preclude or in any way restrict the Investors from investing or participating in any particular enterprise whether or not such enterprise has products or services which compete with those of the Company.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

COMPANY

BEAM THERAPEUTICS INC.

By: /s/ John Evans
Name: John Evans
Title: Chief Executive Officer

SCHEDULE A

Investors

F-Prime Capital Partners Healthcare Fund V LP

ARCH Venture Fund IX, L.P.

ARCH Venture Fund IX Overage, L.P.

Eight Roads Ventures Japan II L.P.

HH Beam Holdings LLC Suite 2202, 22nd Floor Two

Heritage Medical Systems 318 N Carson St.

Omega Fund V, L.P.

Berggruen Holdings Ltd.

Li, Ning Zhao

Danhua Capital II L.P.

Marc Tessier-Lavigne

David Schenkein

Thomas O. Daniel Living Trust

Inevitable Ventures, LLC

SP Investment Associates Managed LLC

Mark Fishman

Yufeng Shi

SiddharthB. Shenai

Trinitas Capital G, L.P.

Cormorant Private Healthcare Fund II, LP

Cormorant Global Healthcare Master Fund, LP

Altitude Life Science Ventures Fund III, L.P.

Evan Rachlin

Dreamers Fund I LP

Hans Utsch

Redmile Biopharma Investments I, L.P.

RAF, L.P.

SCC Venture VII 2018-C, L.P.

Advance Data Services Limited

Q-Ventures Program II (Co-Invest Holdings) Ltd.

ArrowMark Life Science Fund, LP

GV2019, L.P.

Exhibit 10.1

LEASE FOR

26 LANDSDOWNE STREET

Cambridge, Massachusetts

LANDLORD

UP 26 LANDSDOWNE, LLC,
a Delaware limited liability company

TENANT

BEAM THERAPEUTICS, INC.
a Delaware corporation

Dated: February 21, 2018

Table of Contents

LEASE

ARTICLE 1

RECITALS. DEFINITIONS AND BASE LEASE TERMS

Section 1.1. Recitals.

This Lease (the "Lease") is entered into this 21st day of February, 2018 (the "Effective Date") by and between UP 26 Landsdowne, LLC, a Delaware limited liability company (the "Landlord") and Beam Therapeutics, Inc., a Delaware corporation (the "Tenant").

In consideration of the mutual covenants herein set forth, the Landlord and the Tenant do hereby agree to the terms and conditions set forth in this Lease.

Section 1.2. Definitions.

Certain terms used in this Lease shall have the meanings set forth below:

"Additional Rent" means all charges payable By the Tenant pursuant to this Lease other than Annual Fixed Rent, including without implied limitation the Tenant's Tax Expense Allocable to the Premises as provided in Section 3.2; the Tenant's Operating Expenses Allocable to the Premises in accordance with Section 3.3; amounts payable to Landlord for separately submetered utilities and services pursuant to Section 3.4; amounts payable for special services pursuant to Section 3.5; and the Landlord's share of any sublease or assignment proceeds pursuant to Section 6.8.

"Annual Fixed Rent" - See Exhibit A and Section 3.1.

"Brokers" - Jones Lang LaSalle New England LLC (for the Landlord) and Transwestern Consulting Group (for the Tenant). See Section 12.8.

"Building" - See Exhibit A.

"Common Areas" - See Section 2.2.

"Default Interest Rate" - see Section 9.6.

"Excusable Delay" means any delay in the satisfaction of the conditions in question to the extent the same is a consequence of External Causes including, without limitation, any governmental embargo restrictions, or actions or inactions of local, state or federal governments (such as, without limitation, any delays in issuing building permits, certificates of occupancy or other similar permits or certificates without the fault of either party).

"External Causes" means, when referring to a party's responsibilities under this Lease, collectively Acts of God, war, civil commotion, terrorism, fire, flood or other casualty, strikes or other extraordinary labor difficulties or shortages of labor or materials or equipment in the ordinary course of trade, extraordinary weather conditions, government order or regulations or other cause not reasonably within the control of such party, and not due to the fault or neglect of such party. In no event shall financial inability be deemed to be an External Cause.

"Land" means the parcel of land situated in Cambridge, Massachusetts, described in Exhibit B.

"Landlord's Address for Notices" *through March 31, 2018*

UP 26 Landsdowne, LLC
c/o Forest City Realty Trust, Inc.
1130 Terminal Tower
50 Public Square
Cleveland, Ohio 44113-2203
Attention: General Counsel

"Landlord's Address for Notices" ***commencing April 1, 2018***

UP 26 Landsdowne, LLC
c/o Forest City Realty
Key Tower 127
Public Square, Suite 2400
Cleveland, Ohio 44113
Attention: General Counsel

with copies to:

Forest City Commercial Management, Inc.
38 Sidney Street
Cambridge, Massachusetts 02139-4234
Attention: General Manager

"Landlord's Work" - See Section 2.1

"Leasehold Improvements" - See Exhibit E-l regarding the construction of improvements by Tenant.

"Lease Year" - A one year period commencing on the Rent Commencement Date (provided, however, that if the Rent Commencement Date does not occur on the first day of a month, the first Lease Year shall end on the last day of the month in which the anniversary of the Rent Commencement Date occurs); each subsequent Lease Year shall consist of one calendar year beginning on the day immediately following the expiration of the prior Lease Year.

"Park" - The buildings and associated land located from time to time within University Park at MIT, as such area is depicted on Exhibit C-2.

"Parking Passes" - See Exhibit A "Permitted Uses: - See Exhibit A.

"Premises: - See Exhibit A.

"Property" - The Land and the Building.

"Removable Alterations" - See Section 4.2.

"Rules and Regulations" - See Section 6.3 and Exhibit F.

"Tenant's Original Address" –

BEAM THERAPEUTICS, INC.
c/o Mass Innovation Labs
675 W. Kendall St.
Cambridge, MA 02141
Attention: John Evans

"Tenant's Work" - See Section 4.3.

"Term" - See Exhibit A.

"Term Commencement Date" - See Exhibit A and Section 2.5.

Section 1.3. Base Lease Terms.

The Basic Lease Terms are set forth on Exhibit A. attached.

ARTICLE 2

PREMISES AND TERM

Section 2.1. Premises and Landlord's Work.

The Landlord hereby leases to the Tenant, and the Tenant hereby leases from the Landlord, for the Term, the Premises comprised of the space illustrated on Exhibit C-l. in its current "as-is" shell condition, with existing improvements in the Premises having been demolished and removed, provided however that Landlord shall be responsible for (i) completion of work required by Landlord to fulfill Landlord's obligations as outlined in the Tenant/Landlord Responsibility Matrix attached hereto as Exhibit D, ***provided that*** the parties acknowledge and agree that Landlord's Work (defined below) shall proceed concurrently with the construction of Tenant's Work (to the extent that such Landlord's Work does not materially interfere with the construction of Tenant's Work), and in any event, Landlord's Work shall be Substantially Completed (as such term is defined in Exhibit E-l), on or prior to the Rent Commencement Date except for any outstanding Punch List items (which Landlord will diligently pursue to completion, and which shall be performed at Landlord's sole cost and expense); (ii) installation of a new centralized lab-ready base building HVAC system, delivery of mechanical, electrical, life safety and plumbing systems serving the Premises in good operating condition and repair, and (iii) refurbishment of the existing common area locker/shower room on the first floor of the Building (all work described in (i) - (iii) above, collectively, the "Landlord's Work") subject to Landlord's reservations set forth in Section 2.3, such easements, covenants and restrictions of record as may affect the Property and the terms and conditions of this Lease. Landlord shall perform the Landlord's Work in a good and workmanlike manner, free from faults and defect in compliance with all applicable federal, state and local laws, rules and regulations.

Landlord shall substantially complete the Landlord's Work in a timely and diligent manner with a target date of May 31, 2018 (the "Landlord's Work Target Date"). Landlord use good faith efforts to ensure, and cause Contractor to ensure, that completion of the Landlord's Work shall not interfere with the ongoing construction of the Initial Leasehold Improvements. See Section 4.5 herein for additional requirements governing the Landlord's Work. Prior to the anticipated Rent Commencement Date, Tenant or Tenant's representative shall conduct an inspection of the Premises with Landlord or Landlord's representative to develop a punch list of all Landlord's Work items which are not complete or which require correction (the "Punch List"). Landlord shall diligently pursue to completion and/or correction all items on the Punch List within a reasonable time after Landlord receives the Punch List and shall give Tenant written notice when all of the items on the Punch List have been completed and/or corrected. Notwithstanding the foregoing, Landlord agrees that on Landlord's Work Target Date, all items of Landlord's Work necessary to enable Tenant to reasonably conduct its business in the Premises shall have been completed and such items of work shall not be included on the Punch List.

Tenant shall further be subject to any easements, covenants and/or restrictions or other matters of record encumbering the Park provided that any such matters of record arising after the date hereof do not prohibit or materially and adversely affect Tenant's use and occupancy of the Premises for the Permitted Use or access to the Premises, or materially and adversely affect Tenant's rights under this Lease. The Tenant acknowledges that, except as expressly set forth in this Lease, there have been no representations or warranties made by or on behalf of the Landlord with respect to the Premises, the Building or the Property or with respect to the suitability of any of them for the conduct of the Tenant's business or activities. The Premises shall exclude common areas and facilities of the Property, including without limitation exterior faces of exterior walls, the entry, vestibules and main lobby of the Building, first floor elevator lobby and lavatories, the common stairways and stairwells, elevators and elevator wells, boiler room, sprinklers, sprinkler rooms, elevator rooms, mechanical rooms, loading and receiving areas, electric and telephone closets, janitor closets, and pipes, ducts, conduits, wires and appurtenant fixtures and equipment serving exclusively or in common other parts of the Building. If the Premises at any time includes less than the entire rentable floor area of any floor of the Building, the Premises shall also exclude the common corridors, vestibules, elevator lobby, lavatories, and freight elevator vestibule located on such floor.

Section 2.2. Appurtenant Rights.

(a) The Tenant shall have, as appurtenant to the Premises, the nonexclusive right to use in common with others, subject to the Rules and Regulations (as defined in Section 6.3): (i) the entry, vestibules and main lobby of the Building, the common stairways, elevators, sprinkler rooms, mechanical rooms, electric and telephone closets, Tenant's Proportionate Share (as set forth in Exhibit A) of the use of the existing Building life-safety emergency generator (which shall be maintained and replaced by Landlord from time to time as required) and of the use of the stand-by generator that Landlord will have installed in the Building by no later than Rent Commencement Date and the pipes, sprinklers, ducts, conduits, wires and appurtenant

fixtures and equipment serving the Premises in common with others, (ii) common walkways and driveways situated upon the Land that are necessary or reasonably convenient for access to the Building, (iii) access to, and use of in common with other tenants of, loading and receiving areas and freight elevators, and electrical and telephone closets, all subject to Rules and Regulations then in effect and (iv) if the Premises at any time includes less than the entire rentable floor area of any floor, the common corridors, vestibules, elevator lobby, lavatories, and Sleight elevator vestibule located on such floor (collectively, the "Common Areas"). Tenant and its authorized contractors and cleaning personnel shall have 24 hour, seven day per week access to the Premises, freight loading area and disposal areas and freight elevators, all at no additional cost and subject to the provisions of this Lease and interruption for External Causes, casualty and condemnation. Without limiting the foregoing, Tenant shall have as appurtenant to the Premises, (A) the right to use a portion of the first floor to house Tenant's acid neutralization system (which shall be operated and maintained by Tenant) and Tenant's solvent storage needs, together with access thereto from the common hallway, (B) use of the central vacuum system and compressed air system (installed and maintained by Landlord) in common with other tenants entitled thereto, together with access to such systems, the cost of which shared systems shall be part of Operating Expenses (provided that, in the event that Tenant shall create one or more of its own independent system for vacuum and/or compressed air as part of its leasehold improvements, Tenant shall not be obligated to share in costs related to the shared systems as part of Tenant's Operating Expenses Allocable to the Premises, and (C) the right to use Tenant's Share of the Building's solvent storage capacity of 480 gallons and access to the control areas therefor as more fully provided in Section 12.16 hereof. Tenant shall have 24-hour, seven (7) days per week access to the Premises, the space where Tenant's acid neutralization system is located, the common central vacuum and compressed air systems, control areas for solvent storage, freight loading area and disposal areas and freight elevators, and the dumpster and/or compactor provided by Landlord in the refuse disposal area, all at no additional cost and subject to the rules and regulations set forth in Exhibit P and interruption for External Causes, casualty and condemnation.

(b) Subject to Section 4.1 with respect to installation requirements, Tenant shall have the right, at no additional rental cost, to install heating, ventilation and air conditioning equipment, generators, antennas, satellite dishes and other equipment on the roof of the Building in areas that in aggregate do not exceed Tenant's proportionate share of roof area of the Building, in each case in locations designated by Landlord. Any such equipment installed by Tenant shall be for Tenant's own use and shall be subject to (i) Landlord's approval regarding location and installation specifications, and such requirements intended to any specifications arising from the roof warranty, including the requirement to use such contractor(s) as Landlord may specify for such work, such approval not to be unreasonably withheld, conditioned or delayed, and (ii) applicable City of Cambridge and other legal requirements. Tenant shall be responsible for all costs relating to the installation, maintenance and removal of such equipment installed by Tenant on the Building roof. In addition to the foregoing, Tenant shall have the right to the nonexclusive use of available space within the enclosed mechanical penthouse constructed on the roof on a proportionate share basis.

Section 2.3. Landlord's Reservations.

(a) The Landlord reserves the right from time to time, without unreasonable interference with the Tenant's use to alter or modify the Common Areas, provided that (i) the Landlord gives the Tenant reasonable advance notice of the Landlord's contemplated alterations or modifications where they are reasonably likely to impact Tenant's use and enjoyment of the Premises, (ii) any such actions arc effected in a good and workmanlike manner, and (iii) such alterations or modifications do not materially reduce the size of the Premises, or permanently impair Tenant's access to the Premises or its practical use and enjoyment thereof or of the Appurtenant Rights, and any such alterations or modifications of any common facilities are substantially equivalent to or better for Tenant's use of the Premises consistent with this Lease.

(b) In addition to other rights reserved herein or by law, Landlord reserves the right from time to time; without unreasonable interruption of Tenant's use and access to the Premises and with written notice to Tenant, except in emergencies: (i) to make additions to or reconstructions of the Building and to install, use, maintain, repair, replace and relocate for service to the Premises and other parts of the Building, the pipes, ducts, conduits, wires and appurtenant fixtures, wherever located in the Premises, the Building, or elsewhere in the Property, provided that the usable area of the Premises shall not be materially reduced and, to the extent practicable, such installations, replacements or relocations in the Premises shall be placed above ceiling surfaces, below floor surfaces, or to the outside of the interior face of perimeter walls; (ii) to name or change the name of the Building, and (iii) to grant easements and other rights with respect to the Property, provided same do not materially reduce the size of the Premises, or permanently impair Tenant's access to the Premises or its practical use and enjoyment thereof or of the Appurtenant Rights .

Section 2.4. Parking Passes.

From and after the Rent Commencement Date, the Landlord shall provide Parking Passes (as defined in Exhibit A and in the quantity specified in Exhibit A) for use by the Tenant's employees in accordance with the provisions of this Section 2.4, and in the 55 Franklin Street garage as designated on Exhibit C-2. Landlord reserves the right to relocate some or all of Tenant's parking spaces to the parking garage located at 80 Landsdowne (also within University Park). The Tenant agrees that it and all persons claiming by, through and under it, shall at all times abide by the rules and regulations with respect to the use of the parking facilities provided by the Landlord pursuant to this Lease. If there are any conflicts between the provisions of such rules and regulations and any provisions of this Lease, the provisions of this Lease shall govern. The Landlord acknowledges that it is the Landlord's responsibility to assure Tenant that holders of Parking Passes who comply with the Rules and Regulations are able to park their motor vehicles in the designated parking facilities within the Park. The Tenant acknowledges that the parking facilities within the Park may be owned by an entity other than Landlord. The parking spaces relating to the Parking Passes shall be accessible twenty four (24) hours per day, seven (7) days per week. In no event are Parking Passes transferable other than to the holder, from time to time, of the tenant's interest under this Lease or a subtenant that has been demised all or a portion of the Premises in conformity with the requirements of this Lease, and use of the Parking Pass is limited to use by employees, business invitees and visitors of either of the foregoing. The charge for each Parking Pass shall be equal to the Market Rate Parking Charge, established by

the parking garage operator from time to time. “Market Rate Parking Charge” means the monthly parking rate for parking facilities charged from time to time by owners of parking facilities of comparable quality at mixed use office/research parks in the commercial markets that surround the MIT campus (East Cambridge/Kendall Square/Cambridgeport). The Market Rate Parking Charge shall constitute Additional Rent and shall be payable monthly to Landlord at the time and in the fashion in which Annual Fixed Rent under this Lease is payable. Without limiting Landlord’s other remedies under the Lease, if Tenant shall fail to pay the amounts due for such Parking Passes for more than thirty (30) days after notice of such failure, then Landlord may terminate Tenant’s rights to such Parking Passes immediately upon notice by Landlord.

Upon written request from time to time, and subject to availability (as determined by Landlord in its sole discretion), Tenant may obtain additional Parking Passes on a month-to- month basis (i.e. terminable by either party on 30 days’ prior written notice), which additional Parking Passes shall be provided to Tenant on all of the terms and conditions of this Article 2 except as expressly set forth in this sentence.

At any time during the Term Landlord shall have the right to assign Landlord’s obligations to provide parking, as herein set forth, together with Landlord’s right to receive Additional Rent for such parking spaces as herein provided, to a separate entity created for the purpose of providing the parking privileges set forth herein. In such event, Landlord and Tenant agree to execute and deliver appropriate documentation, including documentation with the new entity, reasonably necessary to provide for the new entity to assume Landlord’s obligations to provide the parking privileges to Tenant as specified herein and for the Tenant to pay the Additional Rent attributable to the parking privileges directly to the new entity. Landlord shall, however, remain primarily liable for the provision of Tenant’s parking privileges.

Section 2.5. Term Commencement Date and Rent Commencement Date.

The “Term Commencement Date” shall be the day on which Landlord delivers the Premises to Tenant in broom-clean shell condition, with all demolition and removal associated with existing leasehold improvements complete, and with the Premises in a condition to allow Tenant to commence the Tenant Work (“Tenant Construction Readiness”). Landlord represents and covenants with Tenant that the Premises shall be in compliance with all applicable environmental laws and free of Hazardous Materials (as defined in Section 5.4 hereof) at the time of delivery to Tenant, and agrees to provide Tenant with a copy of the decommissioning report in its possession regarding the condition of the Premises as it existed prior to Landlord’s demolition work and removal of previous leasehold improvements therein. The Landlord shall give written notice to Tenant as to the Term Commencement Date no less than seven (7) days prior to such Term Commencement Date, and the Landlord shall cause the Term Commencement Date to be no earlier than the day on which this Lease is fully executed, and no later than March 1, 2018. “Rent Commencement Date” shall be the earlier to occur of (i) Tenant’s occupancy of any portion of the Premises for business purposes, or (ii) seven (7) months after the Term Commencement Date (the “Scheduled Rent Commencement Date”). Notwithstanding the foregoing, upon the following terms and conditions, but not otherwise, if (i) the Landlord is delayed in achieving (a) Tenant Construction Readiness beyond the Tenant Construction Readiness Date, or (b) Substantial Completion of the Landlord’s Work beyond the Landlord’s Work Target Date, or (ii) the Tenant is delayed in Tenant’s Construction Work by a

Landlord Delay, and (iii) any such delay is not due to Tenant Delay, then the Rent Commencement Date shall be postponed by the number of days that Tenant Construction Readiness and/or Substantial Completion of the Landlord's Work is so delayed. Without limitation of the foregoing, there shall be no postponement of the Scheduled Rent Commencement Date to the extent that the Tenant Construction Readiness Date, the Substantial Completion of the Landlord's Work or Tenant's Construction Work is delayed on account of Tenant Delay.

The Term Commencement Date, the Rent Commencement Date, and the Term shall be as set forth on Exhibit A.

Section 2.6. Extension Option.

Provided that there has been no Event of Default which is uncured and continuing on the part of the Tenant on the date of exercise, and the Tenant or any entity which succeeds to Tenant's rights hereunder pursuant to a Permitted Transfer is, as of the date of exercise and as of the commencement date of each Extension Term, actually occupying at least sixty percent (60%) of the Premises for its business purposes, the Tenant shall have the right to extend the Term hereof for one (1) additional period of five (5) years on the following terms and conditions (the "Extension Option):

(a) The Tenant shall have the right to extend the Term hereof for one (1) period of five (5) years (the "Extension Term") on the terms and conditions set forth in this Section 2.6(a) and (b). Such right to extend the Term shall be exercised by the giving of notice by Tenant to Landlord at least twelve (12) months prior to the expiration of the Initial Term (the "Extension Notice Deadline Date"). Upon the giving of such notice on or before the Extension Notice Deadline Date, this Lease and the Term hereof shall be extended for an additional term of five (5) years, without the necessity for the execution of any additional documents except a document memorializing the Annual Fixed Rent for the Extension Term to be determined as set forth below. Time shall be of the essence with respect to the Tenant's giving notice to extend the Term on or before the Extension Notice Deadline Date.

(b) The Extension Term shall be upon all the terms, conditions and provisions of this Lease except the Annual Fixed Rent during first Lease Year of the Extension Term shall be the Extension Fair Rental Value of the Premises as determined under Section 2.6(c) below (the "Then Applicable Annual Fixed Rental Rate"). If the Tenant makes a written request to the Landlord for a proposal for the Extension Fair Rental Value for the Extension Term, the Landlord shall make such a written proposal to the Tenant within thirty (30) days after receipt of he Tenant's request therefor, but in no event shall the Landlord be required to deliver such a proposal sooner than fourteen (14) months prior to the date as of which such proposal is to become effective. Alternatively, the Landlord may, at its election, propose an Extension Fair Rental Value to the Tenant without any request having been made, but the making of such proposal shall not affect Tenant's rights under Section 2.6(a) or accelerate the time in which Tenant may exercise the Extension Option. The determination of the Extension Fair Rental Value shall include a determination as to whether an Annual Fixed Rent Escalator Factor should be applicable to the Extension Term, and, if so, the amount thereof.

(c) For purposes of the Extension Term described in this Section 2.6, the "Extension Fair Rental Value" of the Premises shall mean the then current fair market annual rent for leases of other comparable laboratory and office space that is in condition similar to the then "as-is" condition of the Premises, and located in the commercial markets that surround the MIT campus (East Cambridge, Kendall Square, Cambridgeport), taking into account the economic terms and conditions specified in this Lease that will be applicable thereto, including the savings, if any, due to the absence or reduction of brokerage commissions. The Landlord and the Tenant shall endeavor to agree upon the Extension Fair Rental Value of the Premises within thirty (30) days after the Tenant has exercised its option for the Extension Term. If the Extension Fair Rental Value of the Premises is not agreed upon by the Landlord and the Tenant within this time frame, each of the Landlord and the Tenant shall retain a real estate professional with at least ten (10) years continuous experience in the business of appraising or marketing similar commercial real estate in the Cambridge, Massachusetts area who shall, within thirty (30) days of his or her selection, prepare a written report summarizing his or her conclusion as to the Extension Fair Rental Value based upon the criteria set forth above. The Landlord and the Tenant shall simultaneously exchange such reports; provided, however, if either party has not obtained such a report as of the last day of said thirty (30) day period then the determination set forth in the other party's report shall be final and binding upon the parties. If both parties receive reports within such time and the lower determination is within ten percent (10%) of the higher determination, then the average of these determinations shall be deemed to be the Extension Fair Rental Value for the Premises. If these determinations differ by more than ten percent (10%), then the Landlord and the Tenant shall mutually select a person with the qualifications stated above (the "Final Professional") to resolve the dispute as to the Extension Fair Rental Value for the Premises. If the Landlord and the Tenant cannot agree upon the designation of the Final Professional within fifteen (15) days of the exchange of the first valuation reports, either party may apply to the American Arbitration Association, the Greater Boston Real Estate Board, or any successor thereto, for the designation of a Final Professional. Within ten (10) days of the selection of the Final Professional, the Landlord and the Tenant shall each submit to the Final Professional a copy of their respective real estate professional's determination of the Extension Fair Rental Value for the Premises. The Final Professional shall not perform his or her own valuation, but rather shall, within thirty (30) days after such submissions, select the submission which is closest to the determination of the Extension Fair Rental Value for the Premises which the Final Professional would have made acting alone. The Final Professional shall give notice of his or her selection to the Landlord and the Tenant and such decision shall be final and binding upon the Landlord and the Tenant. Each party shall pay the fees and expenses of its real estate professional and counsel, if any, in connection with any proceeding under this paragraph, and one-half of the fees and expenses of the Final Professional. In the event that the commencement of the Extension Term occurs prior to a final determination of the Extension Fair Rental Value therefor (the "Extension Rent Determination Date"), then until the Extension Rent Determination Date the Tenant shall pay the Annual Fixed Rent at the greater of (i) the rate specified by the Landlord in its proposed Extension Fair Rental Value or (ii) the Annual Fixed Rent in effect immediately prior to the commencement of the Extension Term. If the Extension Fair Rental Value is determined to be greater than the Annual Fixed Rent paid with respect to the Premises for any portion of the Extension Term occurring prior to the Extension Rent Determination Date, then the Tenant shall pay to the Landlord the amount of such underpayment together with the next installment of Annual Fixed Rent thereafter coming due, and if the Annual Fixed Rent for

the Extension Term is determined to be less than the Annual Fixed Rent paid with respect to the Premises prior to the Extension Rent Determination Date, then the Landlord shall credit the amount of such overpayment against the monthly installments of Annual Fixed Rent thereafter coming due.

ARTICLE 3

RENT AND OTHER PAYMENTS

Section 3.1. Annual Fixed Rent.

The Annual Fixed Rent applicable to the Premises during the Term shall be as set forth on Exhibit A. On the Rent Commencement Date and on the first day of each month thereafter, the Tenant shall pay, without notice or demand, monthly installments of one twelfth (1/12) of the Annual Fixed Rent in effect in advance for each full calendar month of the Term following the Rent Commencement Date and a corresponding fraction of said one twelfth (1/12) for any fraction of a calendar month in which the Rent Commencement Date occurs. On the day that is the first anniversary of the Rent Commencement Date, and on each anniversary of that date thereafter, Annual Fixed Rent for the Premises shall increase to an amount equal to one hundred three percent (103%) of the Annual Fixed Rent immediately preceding such anniversary.

Section 3.2. Real Estate Taxes.

From and after the Rent Commencement Date, during the Term, the Tenant shall pay to the Landlord, as Additional Rent, the Tenant's Tax Expenses Allocable to the Premises (as such term is hereinafter defined) in accordance with this Section 3.2. The terms used in this Section 3.2 are defined as follows:

(a) "Tax Fiscal Year" means the 12 month period beginning on July 1 of each year or if the appropriate governmental tax fiscal period shall begin on any date other than July 1, such other date.

(b) "The Tenant's Tax Expense Allocable to the Premises" means (i) that portion of the Landlord's Tax Expenses for an Operating Fiscal Year (as defined below) which bears the same proportion thereto as the rentable floor area of the Premises (from time to time) bears to the rentable floor area of the Building and (ii) in the event that the Premises are improved to a standard which is materially higher than other portions of the Property and the taxing authority has calculated the Building valuation on such basis, such portion of the Real Estate Taxes on the Property with respect to any Operating Fiscal Year as is appropriate so that the Tenant bears the portion of the Real Estate Taxes which are properly allocable to the 'remises, as reasonably determined by Landlord based on information with respect to the assessment process made available by the assessing authorities. Landlord's determination of such allocation shall take into account the rate of appreciation, if any, of real property in the City of Cambridge from the date of the prior assessment to the date of the new assessment, and the portion of any increased assessment on the Property which is allocable to any such general increase in the value of the real property in the City of Cambridge shall not be allocated disproportionately to Tenant.

(c) “The Landlord’s Tax Expenses” with respect to any Tax Fiscal Year means the aggregate Real Estate Taxes with respect to that Tax Fiscal Year, reduced by any abatement receipts with respect to that Tax Fiscal Year.

(d) “Real Estate Taxes” means (i) all real property taxes, special assessments and similar charges of every kind and nature assessed by any governmental authority on the Property, but excluding any income taxes payable by Landlord as a result of payments made to Landlord by Tenant or any other tenant at the Property; (ii) reasonable expenses incurred in connection with negotiating with the city assessor’s office, in advance of the establishment of the assessed valuation of the Property, to establish a fair and reasonable assessment therefor; and (iii) reasonable expenses incurred in connection with any proceedings for abatement of such taxes or special assessments. Any special assessments to be included within the definition of “Real Estate Taxes” shall be limited to the amount of the installment (plus any interest thereon) of such special tax or special assessment (which shall be payable over the longest period permitted by law as reasonably determined by Landlord) required to be paid during the Operating Fiscal Year in respect of which such taxes are being determined. Without limiting the foregoing, Real Estate Taxes include any payments in lieu of taxes. There shall be excluded from such taxes all income, estate, succession, inheritance, excess profit, franchise and transfer taxes, and delinquency interest or penalties; provided, however, that if at any time during the Term the present system of ad valorem taxation of real property shall be changed so that in lieu of the whole or any part of the ad valorem tax on real property; there shall be assessed on the Landlord a capital levy or other tax on the gross rents received with respect to the Property, or a federal, state, county, municipal or other local income, franchise, excise or similar tax, assessment, levy or charge (distinct from any now in effect) based, in whole or in part, upon any such gross rents, then any and all of such taxes, assessments, levies or charges, to the extent so based, shall be deemed to be included within the term “Real Estate Taxes,” based on the Property being the Landlord’s only property.

Payments by the Tenant on account of the Tenant’s Tax Expense Allocable to the Premises shall be made monthly at the time and in the fashion herein provided for the payment of Annual Fixed Rent and shall be in an amount of the greater of (i) one twelfth (1/12) of the Tenant’s Tax Expense Allocable to the Premises for the current Operating Fiscal Year as reasonably estimated by the Landlord, or (ii) an amount reasonably estimated by any holder of a first mortgage or similar lien on the Property, to be sufficient, if paid monthly, to pay the Tenant’s Tax Expense Allocable to the Premises on the dates due to the taxing authority.

Not later than one hundred twenty (120) days after the end of each Operating Fiscal Year or fraction thereof at the end of during the Term, the Landlord shall render the Tenant a statement in reasonable detail showing for the preceding Tax Fiscal Year of the Term or fraction thereof, as the case may be, real estate taxes on the Property, and any abatements or refunds of such taxes, together with a copy of the tax bill or bills for the Tax Fiscal Year in question. Reasonable expenses incurred in obtaining any tax abatement or refund not previously charged may be charged against such tax abatement or refund before the adjustments are made for the Tax Fiscal Year. If at the time such statement is rendered it is determined with respect to any Operating Fiscal Year, that the Tenant has paid (i) less than the Tenant’s Tax Expense Allocable to the Premises or (ii) more than the Tenant’s Tax Expense Allocable to the Premises, then, in the case of (i) the Tenant shall pay to the Landlord, as Additional Rent, within thirty (30) days of

such statement the amount of such underpayment and, in the case of (ii) the Landlord shall credit the amount of such overpayment against the monthly installments of the Tenant's Tax Expense Allocable to the Premises next thereafter coming due (or refund such overpayment within thirty (30) days if the Term has expired to the extent that such overpayment exceeds any amount then due from the Tenant to the Landlord). To the extent that real estate taxes shall be payable to the taxing authority in installments with respect to periods less than a Tax Fiscal Year, the statement to be furnished by the Landlord shall be rendered and payments made on account of such installments. If the Rent Commencement Date occurs on other than the first day of an Operating Fiscal Year, or if the Termination Date occurs on other than the last day of an Operating Fiscal Year, then the amount of Tenant's Tax Expense Allocable to the Premises payable by the Tenant with respect to such Operating Fiscal Year(s) shall be prorated based upon the ratio of the length of the time period during such Operating Fiscal Year(s) in respect of which the Tenant has an obligation to pay Tenant's Tax Expense Allocable to the Premises to the length of such Operating Fiscal Year(s).

Section 3.3. Operating Expenses.

From and after the Rent Commencement Date, during the Term, the Tenant shall pay to the Landlord, as Additional Rent, the Tenant's Operating Expenses Allocable to the Premises, in accordance with this Section 3.3 including, without limitation, the conditions and limitations set forth in clauses (a) through (1) below, with respect to each twelve (12) month period beginning January 1 each year or such other fiscal period of twelve (12) consecutive months hereinafter adopted by the Landlord for lease administration purposes ("Operating Fiscal Year"). Subject to the provisions of this Section 3.3, "The Tenant's Operating Expenses Allocable to the Premises" means that portion of the Operating Expenses for the Property which bears the same proportion thereto as the rentable floor area of the Premises bears to the rentable floor area of the Building. The term "Operating Expenses for the Property" means the Landlord's actual cost of managing, operating, cleaning, maintaining and repairing the Property, including the roads, driveways and walkways providing access to the Building, and shall include without limitation, the cost of fulfilling the maintenance and repair obligations required to be performed by Landlord under Section 5.1 and, subject in each case to the exclusions set forth below, the cost of services performed by Landlord and specified on Exhibit E; premiums for insurance carried pursuant to Section 7.4; the amount of any deductible associated with an insurance claim of the Landlord; compensation (including, without limitation, fringe benefits, worker's compensation insurance premiums and payroll taxes) paid to, for or with respect to all persons engaged in the managing, operating, maintaining or cleaning the Property; legal, auditing, consulting, and professional fees and other costs incurred in connection with the normal and routine maintenance and operation of the Building; interior landscaping and maintenance; steam, water, sewer, gas, oil, electricity, telephone and other utility charges (excluding any such utility charges either separately metered or separately chargeable to the Tenant pursuant to Section 3.4 or any other provision of this lease; cost of providing HVAC services; cost of building and cleaning supplies; the costs of routine environmental and energy efficiency management programs operated by Landlord; market rental costs (or alternatively the Amortization Charge Off (as hereinafter defined) so long as the expenses which are the subject of such Amortization Charge Off would have been permitted Operating Expenses had the item in question been purchased) with respect to equipment used in managing, operating, cleaning, maintaining or repairing the Property; cost of cleaning; cost of maintenance and non-capital repairs and replacements; cost of snow removal;

cost of landscape maintenance; cost of security services; payments under service contracts with independent contractors; management fees at reasonable rates consistent with comparable multi-tenant buildings, as applicable, in the submarket within which the Premises is located with the type of occupancy and services rendered; the cost of any capital repairs, replacements or improvements which (i) are required by any law or regulation enacted or promulgated after the date of this Lease, (ii) reduce Operating Expenses but only to the extent such Operating Expenses are actually reduced, or (iii) improve the management and operation of the Property or the Common Areas in a manner reasonably acceptable and consented to by Tenant (all such capital costs to be amortized on a straight line basis in accordance with generally accepted accounting principles over the useful like of such item, together with interest on the unamortized balance at such rate as may have been paid by the Landlord on funds borrowed for the purpose of making such capital repairs, replacements or improvements (or if the Landlord did not borrow such funds, then at the base lending rate announced by a major commercial bank designated by the Landlord), with only the annual amortization amount ("Amortization Charge Off') being included in Operating Expenses with respect to any Operating Fiscal Year); charges equitably and reasonably allocated to the Building for the operating, cleaning, maintaining, securing and repairing of the Common Areas excluding the initial capital improvement costs associated with initially establishing the Common Areas; costs incurred by Landlord in connection with any employee transportation assistance consisting of shuttle service between the Park and public transportation; and all other reasonable and necessary (in the Landlord's reasonable judgment) expenses paid in connection with the operation, cleaning, maintenance and repair of the Property and Common Areas.

If less than ninety-five percent (95%) of the total rentable floor area of the Building is occupied at any time during the term of this Lease, Landlord may extrapolate components of Operating Expenses that vary with occupancy as though ninety-five percent (95%) of the total rentable floor area of the Building had been occupied at all times during such period, but only if such expenses are actually expended. Additionally, Tenant shall not be charged for amounts allocable to vacant space.

Operating Expenses for the Property shall not include the following:

(a) any cost or expense to the extent to which Landlord is paid or reimbursed, or which is reimbursable to the Landlord, from a third party (other than as a payment for Operating Expenses), insurance, warranties, service contracts, condemnation proceeds or similar k Sources;

(b) salaries and bonuses of officers or executives of Landlord or administrative employees above the grade of the Building general manager, and if personnel below such grades are shared with other buildings or have other duties not related to the Building, only the allocable portion of such person or persons salary shall be included in Operating Expenses;

(c) interest on debt or principal amortization payments or any other payments on any mortgage or any payments under any ground lease;

(d) any fees, costs, and commissions incurred in procuring or attempting to procure other tenants including, but not necessarily limited to brokerage commissions, finders' fees, attorneys' fees and expenses, entertainment costs and travel expenses;

(e) any cost included in Operating Expenses representing an amount paid to a person, firm, corporation or other entity related to Landlord which is in excess of the amount which would have been paid on an arms' length basis in the absence of such relationship (provided that nothing herein shall be construed as requiring that the cost in question equal the lowest possible cost; only that the cost not be inflated solely due to the absence of an arms' length relationship);

(f) depreciation of the Building or any part thereof;

(g) any costs incurred for services or maintenance attributable to portions of the Building or Park which Tenant does not have the right to use;

(h) any costs attributable to the parking garages within University Park;

(i) capital expenditures other than those expressly permitted above;

(j) franchise, gross receipts, unincorporated business, inheritance, foreign ownership or control or income taxes imposed upon Landlord;

(k) costs incurred in connection with the sale of the Building or interests therein;

(l) the cost of electric current and other utilities furnished to any rentable areas of the Building occupied by any other tenant or by Landlord or any affiliate of Landlord;

(m) costs to comply with laws in effect as of the date hereof;

(n) costs incurred to remedy structural and non-structural defects in the original construction of the Building; and

(o) expenses for repairs or maintenance for which Landlord is reimbursed or pursuant to insurance, warranties, service contracts or otherwise.

Payments by the Tenant for its share of the Tenant's Operating Expenses Allocable to the Premises shall be made monthly at the time and in the fashion herein provided for the payment of Annual Fixed Rent. The amount so to be paid to the Landlord shall be an amount from time to time reasonably estimated by the Landlord to be sufficient to aggregate a sum equal to the Tenant's share of the Tenant's Operating Expenses Allocable to the Premises for each Operating Fiscal Year.

Not later than one hundred twenty (120) days after the end of each Operating Fiscal Year or fraction thereof during the Term or fraction thereof at the end of the Term, the Landlord shall render the Tenant a statement in reasonable detail and according to usual accounting practices certified by an officer of the Landlord, showing for the preceding Operating Fiscal Year or

fraction thereof, as the case may be, the Operating Expenses for the Property and Tenant's Operating Expenses Allocable to the Premises. Said statement to be rendered to the Tenant also shall show for the preceding Operating Fiscal Year or fraction thereof, as the case may be, the amounts of Operating Expenses already paid by the Tenant. If at the time such statement is rendered it is determined with respect to any Operating Fiscal Year, that the Tenant has paid (i) less than the entirety of the Tenant's Operating Expenses Allocable to the Premises or (ii) more than the Tenant's Operating Expenses Allocable to the Premises, then, in the case of (i) the Tenant shall pay to the Landlord, as Additional Rent, within thirty (30) days of such statement the amounts of such underpayment and, in the case of (ii) the Landlord shall credit the amount of such overpayment against the monthly installments of the Tenant's Operating Expenses Allocable to the Premises next thereafter coming due (or refund such overpayment within thirty (30) days if the Term has expired to the extent that such overpayment exceeds any amount then due from the Tenant to the Landlord). If the Rent Commencement Date occurs on other than the first day of an Operating Fiscal Year, or if the Termination Date occurs on other than the last day of an Operating Fiscal Year, then the amount of Tenant's Operating Expenses Allocable td the Premises payable by the Tenant with respect to such Operating Fiscal Year(s) shall be prorated based upon the ratio of the length of the time period during such Operating Fiscal Year(s) in respect of which the Tenant has an obligation to pay Tenant's Operating Expenses Allocable to the Premises to the length of such Operating Fiscal Year.

The Tenant may examine or audit the accounts and original bills for Operating Expenses upon ten (10) days' prior written notice to the Landlord, but no more often than one (1) time in any Operating Fiscal Year or Fiscal Year, as applicable. The Landlord agrees that it will make available to the Tenant in the Landlord's office in University Park, during regular business hours, such information as the Landlord has available at such office. In similar manner, the Tenant may examine such further records as Landlord may have, but such matters will be conducted where the Landlord customarily keeps such records, which may be at the headquarters of the Landlord's parent company in Cleveland, Ohio. In the event of any such audit by Tenant, Tenant shall retain a third party professional accounting firm who or which shall not be compensated on a contingency fee basis. The Tenant shall bear the cost of any such audit, unless the same discloses a discrepancy in excess of four percent (4%) of the Tenant's Operating Expenses for the Fiscal Year in question.% which event the Landlord shall reimburse the Tenant for such costs reasonably incurred. For any given Fiscal Year of the Landlord, the Tenant must make any such audit within twelve (12) months after the Tenant's receipt of itemized statements (and any supporting documentation requested by the Tenant) referred to in the preceding paragraph. The Tenant must further make any claim for revision of Operating Expenses for such Fiscal Year by written notice to the Landlord within said twelve (12) month period. The Tenant shall have the right to deduct from future installments of Operating Expenses any overpayments for Operating Expenses made by Tenant which are disclosed by an audit conducted pursuant to this Section 3.3.

Section 3.4. Utility Charges.

From and after the Rent Commencement Date, the Tenant shall pay directly to the provider of the service, all charges for steam, gas, electricity, fuel, water, sewer and other services and utilities furnished to the Premises and separately metered. Tenant shall purchase electricity from the utility service providing electricity to the Building from time to time.

Landlord shall have the right at any time and from time to time to change the electricity provider to the Building. If at any time during the Term, any utility service to the Premises is not separately metered and paid directly to the service provider by Tenant, Tenant's usage and billing shall depend upon Landlord's reading of the check meters (or, if not check metered, upon the reasonable estimate of Tenant's usage as determined by Landlord's engineer, provided that Tenant shall have the right to install check meter(s) at its sole cost and expense) for such service and the results and readings of such check meter(s) whether installed by Tenant or Landlord shall be dispositive for purposes of measuring such usage and billing, or if Tenant's usage is otherwise non-determinable, then such usage and billing will be based on the proportion of Tenant's rentable square footage compared to other tenants having use of the same utility service. Unless separately metered and paid directly by Tenant, Additional Rent for utilities in the Premises may be estimated monthly by Landlord, based upon the estimate set forth in the preceding sentence, and shall be paid monthly by Tenant as billed with a final accounting based upon actual bills following the conclusion of each Operating Fiscal Year.

Section 3.5. Above Standard Services.

If the Tenant requests and the Landlord elects to provide any services to the Tenant in addition to those described in Exhibit E. the Tenant shall pay to the Landlord, as Additional Rent, the amount billed by Landlord for such services at Landlord's standard rates as from time to time in effect. The cost of such services shall not be deemed to be Operating Expenses for the Property as described in Section 3.3. If the Tenant has requested that such services be provided on a regular basis, the Tenant shall, if requested by the Landlord, pay for such services at their actual cost to Landlord, including, without limitation, a reasonable overhead component, at the time and in the fashion in which Annual Fixed Rent under this Lease is payable. Otherwise, the Tenant shall pay for such additional services within thirty (30) days after receipt of an invoice from the Landlord.

Section 3.6. No Offsets.

Annual Fixed Rent and Additional Rent shall be paid by the Tenant without offset, abatement or deduction except as provided herein. Without limiting the foregoing, Tenant's obligation to pay rent shall be absolute, unconditional, and independent and shall not be discharged or otherwise affected by any law or regulation now or hereafter applicable to the Premises, or any other restriction on Tenant's use, or, except as provided in Article 8, any casualty or taking, or any failure by Landlord to perform or other occurrence; except as expressly set forth in this Lease, Tenant waives all rights now or hereafter existing to terminate, quit or surrender this Lease or the Premises or any part thereof, or to assert any defense in the nature of constructive eviction to any action seeking to recover rent. Nothing in this Section 3.6 shall be deemed to prohibit Tenant from bringing a claim for injunctive relief against Landlord or seeking monetary damages in a separate proceeding against Landlord.

ARTICLE 4

ALTERATIONS

Section 4.1. Consent Required for Tenant's Alterations.

The Tenant shall not make alterations or additions to the Premises except in accordance with complete, coordinated construction plans and specifications therefor first approved by the Landlord, which approval shall not be unreasonably withheld, conditioned or delayed (and Landlord agrees in any event to grant its approval or provide written notice of its reason for withholding approval within ten (10) business days of the date of Tenant's request for approval). There will be no charge for Landlord's review of Tenant's plans, specifications and construction, except for Landlord's reasonable, third party, out-of-pocket expenses. Notwithstanding the foregoing, the Tenant may, from time to time without the Landlord's prior consent and at the Tenant's own expense, make interior non-structural alterations and changes in and to the Premises, provided that such alterations or changes (i) do not diminish the value of the Building, (ii) do not exceed the applicable floor loading capacity of the Building; (iii) do not affect existing mechanical or electrical, plumbing, HVAC or other systems in the Building, and/or (iv) do not affect the exterior appearance of the Building (including without limitation by changing glass or making changes to the Premises that are visible from the exterior of the Building), provided that any proposed alterations and changes costing Fifty Thousand Dollars ($50,000.00) or more, and any proposed alterations and changes that do not fulfill the conditions of any of clauses (i) through (iv) above, shall require Landlord's prior approval as aforesaid, and further provided, that any proposed alteration that meets the conditions of clauses (i) through (iv) above but is a purely cosmetic alteration (such as painting and installation of carpeting) shall not require Landlord's approval nor shall Tenant be required to submit plans and specifications therefor to Landlord. Whether or not the Tenant's changes and/or alterations require the Landlord's consent pursuant to this paragraph, the Tenant shall, in each instance, give reasonable prior notice to the Landlord of the presence of Tenant's contractors in the Building and (except for cosmetic alterations) any alterations and changes in and to the Premises which the Tenant intends to undertake, together with a reasonable description of the proposed work and such plans and specifications as the Tenant has therefor. The Landlord shall not be deemed unreasonable for withholding approval of any alterations or additions which (i) would adversely affect any structural or exterior element of the Building, (ii) would affect the exterior appearance of the Building in a manner which is not acceptable to the Landlord, in its sole discretion, or (iii) would adversely affect existing mechanical or electrical, plumbing, HVAC or other systems in the Building, in each case, with respect to clauses (i)-(iii), as reasonably determined by the Landlord in its sole discretion. The Landlord shall not be deemed unreasonable in delaying the approval of any alterations or additions to the extent that Landlord reasonably requires consultation with third party architects or engineers to review the plans for such work. In any notice withholding approval the Landlord shall specify, in reasonable detail, the nature of the Landlord's objection. Neither the Landlord's failure to object to any proposed alterations or additions, nor the Landlord's approval of any plans and specifications furnished by Tenant to Landlord, shall be construed as superseding in any respect, or as a waiver of Landlord's right to enforce, the Tenant's obligation to fulfill all of the terms and conditions of this Lease applicable to any work contemplated thereby. All alterations and additions to the Premises shall be designed in reasonable accordance with the Building design standards promulgated by Landlord from time to time.

Notwithstanding anything to the contrary contained in this Section 4.1, if any of the Tenant's proposed alterations and/or additions affect the roof of the Building, the following additional conditions shall apply:

(a) Such alterations and changes will not in any way interfere with the proper functioning of, and Landlord's access to, equipment located on the roof of the Building or exceed roof loading requirements; and

(b) Adequate measures are taken to reduce the visibility and noise of mechanical equipment, antennae and dishes consistent with the appearance and design scheme required by the Rules and Regulations and any applicable laws, ordinances or regulations of the City of Cambridge.

Promptly following the performance of any alterations or additions to the Premises (except cosmetic alterations as aforesaid), the Tenant shall furnish Landlord an "as built" set of plans and specifications for the Premises and a report evidencing the completion of air balancing (to the extent such alterations or additions affected air balancing), in a format reasonably requested by the Landlord.

Section 4.2. Ownership of Alterations and Initial Leasehold Improvements.

All alterations and additions and the Initial Leasehold Improvements shall be part of the Building and owned by the Landlord; provided, however, that the Landlord may require the Tenant to remove certain specialized alterations and additions and Initial Leasehold Improvements at the expiration, or the early termination of this Lease, should the identified alterations or Leasehold Improvements in Landlord's reasonable judgment (i) adversely affect the general utility of the Building for use by prospective future tenants thereof, and/or (ii) will require unusual expense to readapt the Premises to normal use as laboratory space. Landlord shall specify such items at the time of its approval of their installation. Except as herein provided, all movable equipment, trade fixtures and furnishings not attached to the Premises shall remain the personal property of the Tenant and shall be removed by the Tenant upon expiration or earlier termination of this Lease. Notwithstanding the foregoing, any and all improvements, specifically including modular casework, lab benches, hoods and equipment, funded by the Leasehold Improvements Allowance shall be part of the Building and owned by the Landlord.

Any alterations and additions, if required to be removed upon the termination or expiration of this Lease as hereinabove provided, shall be removed by the Tenant with reasonable care and diligence, including the capping off of all utility connections behind the adjacent interior finish, and the restoration of such interior finish to the extent necessary so that the Premises are left with complete wall, ceiling and floor finishes.

Section 4.3. Construction Requirements for Alterations.

All construction work performed by or on behalf of the Tenant ("Tenant's Work") shall be done in a good and workmanlike manner employing only first class materials and in compliance with the Rules and Regulations (as defined in Section 6.3) that apply to construction, and with all applicable laws and all lawful ordinances, regulations and orders of governmental authority and insurers of the Building. The Landlord or Landlord's authorized agent may (but without any implied obligation to do so) inspect the work of the Tenant at reasonable times and shall give notice of observed defects. Tenant's Work and the installation of furnishings shall always be coordinated in such manner as to maintain harmonious labor relations on the Property and not to damage the Building or interfere with Building construction or operation. Tenant's Work shall be performed by contractors or workmen first approved by the Landlord, which approval the Landlord agrees not to unreasonably withhold, condition or delay. The Tenant, before starting any work, shall receive and comply with the Construction Rules and Regulations attached hereto as Exhibit G and shall (i) cause the Tenant's contractors to comply therewith; (ii) obtain "builder's risk" coverage (in an amount that is reasonable given the quality and quantity of the work to be undertaken) to enhance the insurance coverage otherwise required to be carried by the Tenant hereunder; (iii) secure all licenses and permits necessary for such work; (iv) deliver to the Landlord a statement of the names of its general contractor (or construction manager) and subcontractors who are to perform electrical or plumbing work or are otherwise to perform work that will affect the structure or base building systems of the Building, and the estimated cost to design and construct any Tenant's Work; (v) provide security satisfactory to the Landlord in its reasonable discretion and consistent with the security requirements for comparable work in comparable buildings in the Cambridge market protecting the Landlord against liens arising out of the furnishing of such labor and material; and (vi) cause each contractor to carry worker's compensation insurance in statutory amounts covering all the contractors' and subcontractors' employees and commercial general liability insurance on an occurrence basis with limits of $1,000,000 (individual) and $5,000,000 (occurrence) covering personal injury and death and property damage (all such insurance to be written in companies approved reasonably by the Landlord and insuring the Landlord, such individuals and entities affiliated with the Landlord as the Landlord may designate, any ground lessor or mortgagee that the Landlord may designate, and the Tenant as well as the contractors and to contain a requirement for at least thirty (30) days' notice to the Landlord prior to cancellation, nonrenewal or material change), and deliver to the Landlord certificates of all such insurance prior to the commencement of the applicable Tenant's Work. Tenant shall reimburse the Landlord within 30 days after invoice for any reasonable third-party expenses incurred by the Landlord in connection with any request by the Tenant for consent to any alterations or additions pursuant to this Article 4.

Section 4.4. Payment for Tenant Alterations.

Except as set forth in the Work Letter, the Tenant agrees to pay promptly when due the entire cost of any work done on the Premises by the Tenant, its agents, employees or independent contractors, and not to cause or permit any liens or notice of intent to file a lien for labor or materials performed or furnished in connection therewith to attach to the Premises or the Property and promptly to discharge (or bond over in a manner satisfactory to Landlord in its sole discretion) any such liens which may so attach. If any such lien or notice of intent to file a lien

shall be filed against the Premises or the Property and the Tenant shall fail to cause such lien or notice to be discharged within fifteen (15) days after receipt by the Tenant of notice of the filing thereof, the Landlord may cause such lien or notice to be discharged by payment or otherwise without investigation as to the validity thereof or as to any offsets or defenses which the Tenant may have with respect to the amount claimed. The Tenant shall reimburse the Landlord, as additional rent, for any cost so incurred and shall indemnify and hold harmless the Landlord from and against any and all claims, costs, damages, liabilities and expenses (including reasonable attorneys' fees) which may be incurred or suffered by the Landlord by reason of any such lien or its discharge.

Section 4.5. Initial Leasehold Improvements.

Tenant shall have the right to perform certain initial work to the Premises prior to occupancy (the "Initial Leasehold Improvements"). The construction of the Initial Leasehold Improvements shall be done in accordance with the terms of this Section 4 and the work letter attached hereto as Exhibit E-l (the "Work Letter"). Additionally, and subject to the terms set forth herein and in the Work Letter, Tenant may hire its own architect and engineer for the construction of the Initial Leasehold Improvements, subject to the approval of the Landlord, which shall not be unreasonably withheld, conditioned or delayed. There shall be no construction oversight fee paid to Landlord. However, Landlord shall be reimbursed for any third party out of pocket costs incurred by Landlord in the review and approval of Tenant's plans, specifications, improvements and construction. Tenant agrees to use The Richmond Group or other general contractor reasonably approved by Landlord (the "Contractor") as its general contractor for the Initial Leasehold Improvements. As construction of portions of the Landlord's Work and the Initial Leasehold Improvements will be ongoing simultaneously, both Landlord and Tenant agree to use good faith efforts to cooperate with each other to ensure the various construction activities occur without unreasonable conflict.

ARTICLE 5

RESPONSIBILITY FOR CONDITION OF BUILDING AND PREMISES

Section 5.1. Maintenance of Building and Common Areas by Landlord.

Except as otherwise provided in Article 8, the Landlord shall make such repairs to the foundation, roof, exterior walls (including exterior glass), floor slabs, elevators, base building mechanical, plumbing, HVAC and electrical and life safety systems (to the extent serving more than one tenant), and any other base structural elements of the Building as may be necessary to keep them in good order, condition and repair, and make such repairs to the mechanical systems and equipment serving the Building, except for any mechanical, plumbing and electrical systems and equipment that serve the Premises exclusively ("Tenant's Dedicated Mechanical Systems and Equipment"), and other Common Areas as are necessary to keep them in good order, condition and repair. The Landlord shall further perform the services designated as Landlord's Services on Exhibit E. Landlord shall also provide a dumpster and/or compactor at the loading area of the Building for use by Tenant in common with other tenants for the disposal of non- hazardous and non-controlled substances. Costs and expenses incurred by the Landlord under this Section 5.1 shall be included in Operating Expenses of the Property as permitted under

Section 3.3. Subject to Section 7.5, the Tenant shall be responsible for 100% of the cost of any repair to the Premises, the Building, or the Land caused by the negligence or misconduct of the Tenant, or any agent, employee or contractor of the Tenant.

Section 5.2. Maintenance of Premises by Tenant.

The Tenant shall keep and maintain in good order, condition and repair the Premises and every part thereof and all of Tenant's Dedicated Mechanical Systems and Equipment, ordinary wear and tear and use and damage by fire or other casualty excepted (provided that subject to Section 7.5, the Landlord shall be responsible for damage caused by the fault or neglect of the Landlord, or the Landlord's agents, employees or contractors), excluding those repairs for which the Landlord is responsible pursuant to this Lease. The Tenant shall not permit or commit any damage (waste), and the Tenant shall, subject to Section 7.5, be responsible for the cost of repairs which may be made necessary by reason of damage to the Property caused by the negligence or misconduct of the Tenant, or any of the contractors, employees, or agents of the Tenant. Tenant's Dedicated Mechanical Systems and Equipment, and all other systems and equipment, shall be maintained in good order, condition and repair consistent with prevailing standards at comparable first class leased laboratory buildings, reasonable wear and tear, damage by fire or other casualty, and subject to Section 7.5, damage caused by the fault or neglect of the Landlord, or the Landlord's agents, employees, or contractors excepted.

Section 5.3. Delays in Landlord's Services.

Except as expressly provided herein, Landlord shall not be liable to the Tenant for any compensation or reduction of rent by reason of inconvenience or annoyance or for loss of business arising from the necessity of the Landlord or its agents entering the Premises for any purposes authorized in this Lease, or for repairing the Premises or any portion of the Building.

In case the Landlord is prevented or delayed from making any repairs, alterations or improvements, or furnishing any services or performing any other covenant or duty to be performed on the Landlord's part, by reason of any External Cause, the Landlord shall not be liable to the Tenant therefor, nor, except as expressly otherwise provided in this Lease, shall the Tenant be entitled to any abatement or reduction of rent by reason thereof, nor shall the same give rise to a claim in the Tenant's favor that such failure constitutes actual or constructive, total or partial, eviction from the Premises.

The Landlord reserves the right to stop any service or utility system the Landlord provides or causes to be provided under this Lease when necessary by reason of accident or emergency or exercise of Landlord's rights pursuant to Section 2.3 hereof, or until necessary repairs have been completed; provided, however, that in each instance of stoppage, the Landlord shall exercise reasonable diligence to eliminate the cause thereof. Except in case of emergency repairs, the Landlord will give the Tenant reasonable advance notice of the contemplated stoppage and will use reasonable efforts to avoid unnecessary inconvenience to the Tenant by reason thereof. To the extent that the Landlord is providing or causing to be provided heat, light or any utility or service, in no event shall the Landlord have any liability to the Tenant for the unavailability of the same to the extent that such unavailability is caused by External Causes, except for the equitable abatement of rent provided below, and further provided, however, that

the Landlord is obligated to exercise reasonable efforts to restore such services or utility systems' operation. The Landlord agrees to carry rent interruption insurance in commercially reasonable amounts which permits recovery within, to the extent reasonably available, five (5) days after the insured peril.

Notwithstanding anything contained herein to the contrary, in the event Landlord shall fail to provide the services it is required to provide to Tenant hereunder for any reason other than due to Tenant's acts or omissions, and as a result thereof, Tenant is reasonably unable to use or conduct its operations in part or all of the Premises, Tenant shall be entitled to (i) proportionate abatement of rent (including but not limited to abatement of Tenant's Tax Expenses and Tenant's Operating Expenses) for the period Tenant is reasonably unable to use or conduct its operations on part or all of the Premises, or (ii) terminate this Lease if Landlord is unable to restore such services within six (6) months from the date of interruption. Tenant shall have the right to terminate this Lease as aforesaid by written notice to Landlord at any time after the expiration of such six (6) month period, and such termination shall be effective as of the last day of such six (6) month period.

Section 5.4. Tenant's Responsibilities Regarding Hazardous Materials.

The Tenant covenants and agrees that the Tenant shall not use, generate, store or dispose, nor shall the Tenant suffer or permit the use, generation, storing or disposal in the Premises or otherwise by any of Tenant's contractors, licensees, invitees, agents or employees, of any oil, toxic substances, hazardous wastes or hazardous materials (collectively, "Hazardous Materials") in, on or about the Premises, the Building or the Land, except for Hazardous Materials that are necessary and customary for Tenant's operation of Tenant's Permitted Use (which Permitted Use is set forth on Exhibit A), and in all cases such Hazardous Materials must be used, generated, stored and disposed of in compliance with all applicable law and regulations. The Tenant covenants and agrees that the Tenant shall comply with all applicable laws and regulations in handling and disposing of materials used in its research and other uses of the Premises, whether or not considered Hazardous Materials, and no dumping, flushing or other introduction of Hazardous Materials or such other inappropriate materials into the septic, sewage or other waste disposal systems serving the Premises shall occur, except as specifically permitted by law or regulation and subject to the conditions and qualifications imposed by any governmental license or permit. The Tenant covenants and agrees that the Tenant shall, at its sole cost, promptly remove or remediate all Hazardous Materials that are found upon the Premises, the Building or the Land solely by virtue of the failure of the foregoing covenants and agreements to have been fulfilled, or otherwise solely as the result of the act or omission of Tenant or its contractors, licensees, agents or employees, in a manner complying with all applicable laws and regulations and the provisions of this Lease. If the Tenant should have any responsibility under this Section 5.4 to remove or remediate Hazardous Materials, the Tenant shall keep the Landlord reasonably informed as to the status of the environmental condition at issue, promptly furnish to the Landlord copies of all regulatory filings with any governmental regulatory agencies in connection therewith, and substantiate the performance of its obligations under this Section 5.4. At the expiration or earlier termination of the Term, the Tenant shall promptly remove or remediate any Hazardous Materials from the Premises in a manner consistent with accepted "best practices" and in compliance with all legal requirements relating to the closure of laboratory facilities and disposal of equipment and supplies therein.

If Tenant's transportation, storage or use of Hazardous Materials on the Premises results in the release onto or other contamination of any portion of the Property or adjacent areas, including building or parking areas, soil or surface or ground water, or loss or damage to person(s) or property, without limitation, Tenant agrees to: (a) notify Landlord immediately upon Tenant's obtaining actual knowledge of any such release or contamination, and (b) after consultation with Landlord, clean up the release or contamination as required by all applicable statutes, regulations and standards. In the event of such contamination, Tenant agrees to cooperate with Landlord, as Landlord may reasonably request, and provide such documents, affidavits and information as may be reasonably requested by Landlord to comply with any applicable laws. Tenant shall notify Landlord promptly in the event of any spill or other release of any Hazardous Materials at, in, on, under or about the Premises that is required to be reported to a governmental authority under any applicable laws. Tenant shall promptly forward to Landlord copies of any notices received by Tenant relating to alleged violations of any applicable laws and shall promptly pay when due any fine or assessment against Landlord, Tenant, or the Premises relating to any violation during the Term of any applicable laws by Tenant, its employees, agents, or independent contractors, or with respect to the Premises or the remainder of the Property. If any governmental authority files a lien against the Premises or the remainder of the Property due to any act or omission, intentional or unintentional, of Tenant, its agents, or employees, or for which Tenant is responsible under this Lease, resulting in the releasing, spilling, leaking, leaching, pumping, emitting, pouring, emptying or dumping of any Hazardous Materials, Tenant shall, within fifteen (15) days from the date that Tenant is first given notice of such lien (or within such shorter period of time as may be specified by Landlord if such governmental authority takes steps to cause the Premises to be sold pursuant to such lien),(or within such longer period of time as may be specified in any notice of lien or impending lien provided by any governmental authority) either (A) pay the claim and remove the lien or (B) furnish a cash deposit, bond or such other security as is reasonably satisfactory in all respects to Landlord and sufficient to discharge the lien completely. Tenant shall defend, indemnify Landlord and hold Landlord harmless from and against any damages, liability or expense associated with claims by governmental or other third parties arising out of the presence, removal or remediation of Hazardous Materials for which Tenant is responsible for removal or remediation under this Section 5.4.

Section 5.5. Landlord's Responsibilities Regarding Hazardous Materials.

During the Term of this Lease, if the removal or remediation of Hazardous Materials from the Premises, Building or Land is required to be undertaken, then except to the extent such obligation is the responsibility of the Tenant under Section 5.4 hereof, the Landlord covenants and agrees to undertake the same without charge to the Tenant. Without limitation of the foregoing, if necessary to comply with any applicable legal requirements, should any existing environmental condition of the Land require the removal or remediation of Hazardous Materials, the Landlord shall perform such removal or remediation, without charge to the Tenant, when and if required by applicable legal requirements. The Landlord shall keep the Tenant reasonably informed as to the status of the environmental condition at issue, promptly furnish to the Tenant copies of all regulatory filings with any governmental regulatory agencies in connection therewith, and substantiate the performance of its obligations under this Section 5.5.

ARTICLE 6

TENANT COVENANTS

The Tenant covenants during the Term and for such further time as the Tenant occupies any part of the Premises:

Section 6.1. Permitted Uses.

The Tenant shall occupy the Premises only for the Permitted Uses, and shall not injure or deface the Premises or the Property, nor permit in the Premises any auction sale. The Tenant shall not permit in the Premises any nuisance, or the emission from the Premises of any reasonably objectionable noise, odor or vibration, nor use or devote the Premises or any part thereof for any purpose which is contrary to law or ordinance, or that will be substantially likely to invalidate or increase premiums (above those normally incurred for the Permitted Uses) for any insurance on the Building or its contents (unless the Tenant pays for any such increase in premiums and provided such actions do not interfere with the use and enjoyment of the Land by the Landlord, other tenants, visitors or invitees of the Building) or that will render necessary any alteration or addition to the Building, nor commit or permit any waste in or with respect to the Premises, nor shall Tenant overload existing electrical or other Building systems.

Section 6.2. Laws and Regulations.

The Tenant shall comply with all federal, state and local laws, regulations, ordinances, executive orders, guidelines, federal policies and similar requirements in effect from time to time, including, without limitation, all such requirements relating to Tenant's occupancy and use of the Premises and Hazardous Materials, including, without limitation, City of Cambridge ordinances relating to employment, animal experiments, and hazardous waste and any such requirements pertaining to employment opportunity, anti-discrimination and affirmative action. Tenant shall also conform to recognized "best practices" standards with respect to the physical aspects of its operations carried on within the Premises. Tenant shall have the right to contest any notice of violation for any of the foregoing by appropriate proceedings diligently conducted in good faith. Landlord represents and warrants that the Premises are in compliance with applicable laws. Landlord shall cause the common areas of the Building and the Property to comply with all applicable legal requirements, including, without limitation the Americans with Disabilities Act. Notwithstanding the foregoing or any other provision of this Lease, however, Tenant shall not be responsible for compliance with any such laws, regulations, or the like requiring (a) structural repairs or modifications; or (b) repairs or modifications to the utility or building service equipment; or (c) installation of new building service equipment, such as fire detection or suppression equipment, unless such repairs, modifications, or installations shall (i) be due to Tenant's particular manner of use of the Premises (as opposed to the Permitted Uses generally), or (ii) be due to the gross negligence or willful misconduct of Tenant or any agent, employee, or contractor of Tenant

Section 6.3. Rules and Regulations.

The Tenant agrees to comply with the Rules and Regulations set forth in Exhibit F and such other reasonable and non-discriminatorily enforced rules and regulations of general applicability ("Rules and Regulations") as (i) may from time to time be made by the Landlord of which the Tenant is given written advance notice, so far as the same relate to the use of the Building, the Land and the Tenant's appurtenant parking privileges and (ii) may from time to time be promulgated with respect to all or any portion of the Building (including without limitation pursuant to the Declaration of Covenants for University Park at MIT dated December 15, 1997 and filed for record with the Register of Deeds of Middlesex County). Landlord agrees to uniformly enforce the Rules and Regulations. The Tenant shall not obstruct in any manner any portion of the Property; and, except as set forth in this Lease, shall not permit the placing of any signs, awnings or flagpoles, or the like, visible from outside the Building. Neither shall Tenant place curtains, blinds or shades or similar window treatments visible from outside the Building in the Premises, except as may be otherwise approved by Landlord.

Section 6.4. Safety Compliance.

The Tenant shall keep the Premises equipped with all safety appliances required by law or ordinance or any other regulations of any public authority because of the manner of use made by the Tenant and to procure all licenses and permits so required because of such manner of use and, if requested by the Landlord, do any work so required because of such use, it being understood that the foregoing provisions shall not be construed to broaden in any way the Tenant's Permitted Uses.

Section 6.5. Landlord's Entry.

The Tenant shall permit the Landlord and its agents (which agents shall be identified to Tenant), after at least twenty-four (24) hours' prior notice except in the case of emergencies, to enter the Premises at all reasonable hours for the purpose of inspecting or making repairs to the same, monitoring Tenant's compliance with the requirements and restrictions set forth in this Lease, and, after at least twenty-four (24) hours' notice, for the purpose of showing the Premises to prospective purchasers and mortgagees at all reasonable times and to prospective tenants during the last twelve (12) months of the Term provided that in connection with such entry, Tenant may provide procedures reasonably designed so as not to jeopardize Tenant's trade secrets, proprietary technology or critical business operations, including accompaniment of all such persons by an employee of the Tenant. In case of an emergency, the Landlord shall make good faith efforts to notify the Tenant in person or by telephone prior to such entry, and in any event, the Landlord shall notify Tenant promptly after such entry.

Section 6.6. Floor Load.

The Tenant shall not place a load upon any floor in the Premises exceeding the floor load per square foot of area which such floor was designed to carry, and which is allowed by law. The Tenant's machines and mechanical equipment shall be placed and maintained by the Tenant at the Tenant's expense in settings sufficient, to absorb or prevent vibration or noise that may be transmitted to the Building structure.

Section 6.7. Personal Property Tax.

The Tenant shall pay promptly when due all taxes which may be imposed upon personal property (including, without limitation, fixtures and equipment) in the Premises to whomever assessed. Tenant shall have the right to contest the validity or amount of any such taxes by appropriate proceedings diligently conducted in good faith.

Section 6.8. Assignment and Subleases.

The Tenant shall not assign this Lease or sublet (which term, without limitation, shall include granting of concessions, licenses and the like) the whole or any part of the Premises, nor permit the further underletting or assignment of any sublease or other occupancy agreement (each a "Transfer") without, in each instance, having first received the consent of the Landlord which consent shall not be unreasonably withheld, conditioned or delayed. Any purported Transfer made without such consent or otherwise not fulfilling the conditions and requirements of this Section 6.8 shall be void, and except as specifically permitted in this Section 6.8, in no event shall the Tenant or anyone claiming by, through or under the Tenant have the right to mortgage, pledge, hypothecate or otherwise transfer this Lease. The Landlord shall not be deemed to be unreasonable in withholding its consent to any proposed Transfer that is subject to the Landlord's consent based on any of the following factors:

(a) If the manner in which the proposed occupant conducts its business operations is not consistent, in Landlord's reasonable opinion, with the image and character of the Park development as a first-class biotechnology office/research and development park, then the withholding of consent by the Landlord shall be considered reasonable; and

(b) If the proposed Transfer is (i) an assignment of this Lease, or (ii) a sublease, then in either of such cases, if the proposed occupant is not sufficiently creditworthy and trustworthy in the reasonable opinion of the Landlord with reference to the monetary and other obligations which are to be fulfilled by the Tenant under this Lease, and the reasonable needs of the Landlord to protect the value of the Building, then the withholding of consent by the Landlord shall be considered reasonable; and

(c) If the proposed assignee or subtenant is already actively involved in discussions with either the Landlord or any affiliate of the Landlord regarding space within the Park that is or is to become available for lease, then the withholding of consent by the Landlord shall be considered reasonable.

Notwithstanding anything to the contrary contained in this Section, Tenant shall have the right to assign or otherwise Transfer this Lease or the Premises, or part of the Premises, without obtaining the prior consent of Landlord, (a) to its parent entity or to a wholly-owned subsidiary or to an entity which is wholly owned by the same entity which wholly owns Tenant (an "Affiliate"), provided that (i) the transferee shall, prior to the effective date of the transfer, deliver to Landlord instruments evidencing such transfer and its agreement to assume and be bound by all the terms, conditions and covenants of this Lease to be performed by Tenant, all in form reasonably acceptable to Landlord, and (ii) at the time of such transfer there shall not be an uncured Event of Default under this Lease; or (b) to the purchaser of all or substantially all of its

assets, or to any entity into which the Tenant may be merged or consolidated (along with all or substantially all of its assets) (the "Acquiring Company"), provided that (i) the net assets of the Acquiring Company at the time of the transfer or merger shall not be less than the net assets of Tenant at the time of the transfer, (ii) the Acquiring Company's use of the Premises shall be consistent with the Permitted Uses described in Exhibit A, (iii) the Acquiring Company shall assume in writing, in form reasonably acceptable to Landlord, all of Tenant's obligations under this Lease, (iv) Tenant shall provide to Landlord such additional information regarding the Acquiring Company as Landlord shall reasonably request, and (v) Tenant shall pay Landlord's reasonable third-party expenses incurred in connection therewith (not to exceed $5,000.00 in the aggregate). The transfers described in this paragraph are hereinafter referred to as "Permitted Transfers."

Whether or not the Landlord consents, or is required to consent, to any Transfer, the Tenant named herein shall remain fully and primarily liable for the obligations of the Tenant hereunder, including, without limitation, the obligation to pay Annual Fixed Rent and Additional Rent provided under this Lease.

The Tenant shall give the Landlord at least 30 days prior written notice of any proposed Transfer (except for a Permitted Transfer, which shall require at least ten (10) days prior written notice), specifying the provisions thereof, including (i) the name and address of the proposed occupant, subtenant, assignee or other transferee, (ii) a copy of the proposed occupant's, subtenant's, assignee's, or other transferee's most recent annual financial statement, and (iii) all of the terms and provisions upon which the proposed Transfer is to be made including, without limitation, all of the documentation effectuating such Transfer (which shall be subject to the Landlord's approval not to be unreasonably withheld, conditioned or delayed) and such other reasonable information concerning the proposed Transfer or concerning the proposed occupant, subtenant, assignee or other transferee as the Tenant has obtained in connection with the proposed Transfer. Tenant shall reimburse the Landlord promptly for reasonable legal and other reasonable expenses incurred by the Landlord in connection with any request by the Tenant for consent to any Transfer (not to exceed $5,000.00 in the aggregate). If this Lease is assigned, or if the Premises or any part thereof is sublet or occupied by anyone other than the Tenant, or there is otherwise a Transfer, then during any time when an Event of Default is subsisting, the Landlord may, at any time and from time to time, collect rent and other charges from the assignee, sublessee, occupant or transferee, and apply the net amount collected to the rent and other charges herein reserved, but no such assignment, subletting, occupancy or collection shall be deemed a waiver of the prohibitions contained in this Section 6.8 or the acceptance of the assignee, sublessee or occupant as a tenant or a release of the Tenant from the further performance by the Tenant of covenants on the part of the Tenant herein contained.

Except for Permitted Transfers, the Tenant shall pay to the Landlord fifty percent (50%) of any amounts the Tenant actually receives from any occupant, subtenant, assignee or other transferee as rent, additional rent or other forms of compensation or reimbursement (if any) in excess of the aggregate amount of (i) the proportionate monthly share of Annual Fixed Rent, Additional Rent and all other monies due to Landlord pursuant to this Lease (allocable in the case of a sublease to that portion of the Premises being subleased), (ii) all costs associated with assigning or subleasing the Premises or any portion of the Premises, including without limitation, rent concessions, architecture and engineering expenses, brokerage commissions and reasonable

fees for legal services associated with the transaction, and (iii) Tenant's costs to prepare the space for the assignee or subtenant (all costs in clause (ii) and (iii), collectively, "Sublease Transaction Expenses"). In the circumstances where the transferee pays the consideration due to the Tenant on account of such transfer over time (e.g. monthly rental payments under a sublease), Sublease Transaction Expenses shall be amortized on a straight line basis over the term of the transfer in question. The consent by the Landlord to a Transfer for which the Landlord's consent is required shall not be construed to relieve the Tenant from the obligation to obtain the express consent in writing of the Landlord to any further Transfer whether by the Tenant or by anyone claiming by, through or under the Tenant including, without limitation, any occupant, assignee, subtenant or other transferee.

Except for Transfers to an Affiliate or any sublease during the first twenty-four (24) months of the Term hereof, the Landlord may elect, within thirty (30) days of receipt of written notice from the Tenant of any proposed assignment or sublease of all or any portion of the Premises prior to approving or disapproving any such proposed assignment or sublease, to repossess the Premises or the portion of the Premises under consideration, provided, however, the foregoing right to repossess shall only apply to any proposed assignment or sublease which is for a term that expires during the final year of the Term of this Lease. The Landlord may thereafter lease the Premises in such a manner as the Landlord may in its sole discretion determine. In the event the Landlord elects to repossess the Premises or the portion of the Premises under consideration as provided above, then all of the Tenant's rights and obligations hereunder with respect to the Premises shall cease and shall be of no further force and effect.

ARTICLE 7

INDEMNITY AND INSURANCE

Section 7.1. Indemnity.

To the maximum extent this agreement may be made effective according to law, the Tenant agrees to defend, indemnify and save harmless the Landlord from and against all claims, loss, or damage of whatever nature arising from any breach by Tenant of any obligation of Tenant under this Lease beyond applicable notice and cure periods or from any act, omission or negligence of the Tenant, or the Tenant's contractors, licensees, invitees, agents, servants or employees, or arising from any accident, injury or damage whatsoever caused to any person or property, occurring after the date that possession of the Premises is first delivered to the Tenant and until the end of the Term and thereafter, so long as the Tenant is in occupancy of any part of the Premises, in or about the Premises or arising solely from any accident, injury or damage occurring outside the Premises but within the Building, on the Land, on the access roads and ways, in the parking facilities provided pursuant to the Lease, within University Park or any adjacent area maintained by Landlord or any individual or entity affiliated with Landlord, where such accident, injury or damage results solely from an act or omission on the part of the Tenant or the Tenant's agents or employees, licensees, invitees, servants or contractors, provided that the foregoing indemnity shall not include any cost or damage arising from any act, omission or negligence of the Landlord, or the Landlord's contractors, licensees, invitees, agents, servants or employees.

Landlord agrees to defend, indemnify and save harmless Tenant from legal action, damages, loss, liability and any other expense in connection with loss of life, bodily or personal injury or property damage, arising from or out of the intentional or willful misconduct or gross negligence of Landlord, its agents, employees, licensees, servants, invitees or contractors, which occur in or about the Premises, outside the Premises but within the Building, on the Land, on the access roads and ways, in the parking facilities provided pursuant to the Lease, within University Park or any adjacent area maintained by Landlord or any individual or entity affiliated with Landlord, except to the extent that such loss of life, bodily or personal injury or property damage is due solely to the willful misconduct or act, omission or neglect of Tenant, its agents, contractors, employees, licensees, invitees or servants.

The foregoing indemnities and hold harmless agreements shall include indemnity against reasonable attorneys' fees and all other costs, expenses and liabilities, excluding consequential damages, incurred in connection with any such claim or proceeding brought thereon, and the defense thereof.

Section 7.2. Liability Insurance.

The Tenant agrees to maintain in full force from the date upon which the Tenant first enters the Premises for any reason, throughout the Term, and thereafter, so long as the Tenant is in occupancy of any part of the Premises, by a policy of commercial general liability insurance under which the Landlord, the Building's managing agent, any ground lessor and any holder of a first mortgage on the Property of whom the Tenant is notified by the Landlord (collectively, the "Additional Named Insureds") and the Tenant are named as insureds, and under which the insurer provides a contractual liability endorsement insuring against all cost, expense and liability arising out of or based upon any and all claims, accidents, injuries and damages described in Section 7.1, in the broadest form of such coverage from time to time available. Each such policy shall be non- cancellable and non-amendable (to the extent that any proposed amendment reduces the limits or the scope of the insurance required in this Lease) with respect to the Landlord and such ground lessor and first mortgagee without ten (10) days' prior notice to the Landlord and the Additional Named Insureds and a certificate of insurance shall be delivered to the Landlord. The minimum limits of liability of such insurance as of the Term Commencement Date shall be Five Million Dollars ($5,000,000.00) per occurrence for combined bodily injury (or death) and damage to property.

Notwithstanding anything in this Lease to the contrary, Tenant may elect to self-insure against any and all of the risks, or portion thereof, against which Tenant is required to insure pursuant to the terms of this Lease, provided that either (i) the Chief Financial Officer of Tenant certifies annually that Tenant has a US tax tangible net worth, as of the end of the Tenant's most recent reporting period of not less than One Hundred Fifty Million Dollars ($150,000,000) as computed in accordance with the Generally Accepted Accounting Principles (GAAP), ("Tenant's Net Worth"), or (ii) the Chief Financial Officer of Guarantor certifies annually that Guarantor has a US tax tangible net worth, as of the end of the Guarantees most recent reporting period, of not less than One Hundred Fifty Million Dollars ($150,000,000) as computed in accordance with GAAP, ("Guarantor's Net Worth"). With regard to this Lease, self-insurance will be considered as insurance for the purposes of complying with the terms and conditions of the Lease. Should Tenant's Net Worth be less than $150 Million, Tenant may not avail itself of the election to self-insure.

Section 7.3. Alterations. Improvements and Betterments; Personal Property at Risk.

The Tenant agrees to maintain in full force at all times throughout the Term, policy(s) of all risk property damage insurance, naming Landlord (and the Additional Named Insureds) and the Tenant as insureds as their interests may appear, or a program of self-insurance acceptable to Landlord, covering all of Tenant's leasehold improvements and alterations to the extent of their full replacement costs as updated from time to time during the Term.

Unless caused by the Landlord or its agents, employees, servants or contractors, the Tenant agrees that all of the furnishings, fixtures, equipment, effects and property of every kind, nature and description of the Tenant and of all persons claiming by, through or under the Tenant which, during the continuance of this Lease or any occupancy of the Premises by the Tenant or anyone claiming under the Tenant which, during the continuance of this Lease or any occupancy of the Premises by the Tenant or anyone claiming under the Tenant, may be on the Premises or elsewhere in the Building or on the Land or parking facilities provided hereby, shall be at the sole risk and hazard of the Tenant, and if the whole or any part thereof shall be destroyed or damaged by fire, water or otherwise, or by the leakage or bursting of water pipes, steam pipes, or other pipes, by theft or from any other cause, no part of said loss or damage is to be charged to or be borne by the Landlord, except that the Landlord shall in no event be exonerated from any liability to the Tenant (subject to Section 7.5 hereof) for any injury, loss, damage or liability to the extent same is caused by Landlord's, or its agents', employees', servants' or contractors', negligence or willful misconduct.

Section 7.4. Landlord's Insurance.

The Landlord shall carry such casualty and liability insurance upon and with respect to operations at the Building as may from time to time be deemed reasonably prudent by the Landlord or required by any mortgagee holding a mortgage thereon or any ground lessor of the Land, and in any event, all-risk property insurance against loss by fire and the risks now covered by extended coverage endorsement No. 4 in an amount at least equal to the full replacement cost of the Building, exclusive of foundations, excavations and footings.

Section 7.5. Waiver of Subrogation.

Any insurance carried by either party with respect to the Building, Land, Premises, parking facilities or any property therein or occurrences thereon shall, without further request by either party, if it can be so written without additional premium, or with an additional premium which the other party elects to pay, include a clause or endorsement denying to the insurer rights of subrogation against the other party to the extent rights have been waived by the insured prior to occurrence of any injury or loss. Each party, notwithstanding any provisions of this Lease to the contrary, hereby waives any rights of recovery against the other for injury or loss, including, without limitation, injury or loss caused by negligence of such other party due to hazards covered by insurance containing such, clause or endorsement to the extent of the indemnification received thereunder or the amount of insurance required to be carried hereunder, whichever is greater.

ARTICLE 8

CASUALTY AND EMINENT DOMAIN

Section 8.1. Restoration Following Casualties.

If, during the Term, the Building or the Premises shall be damaged by fire or casualty, subject to termination rights of the Landlord and the Tenant provided below in this Article 8, the Landlord shall proceed to promptly restore, or cause to be restored, the Building to substantially the condition thereof just prior to time of such damage, but the Landlord shall not be responsible for delay in such restoration which may result from External Causes. Provided that the Landlord complies with its obligations to carry casualty insurance in accordance with Section 7.4, the Landlord shall have no obligation to expend in the reconstruction of the Building more than the sum of the amount of any deductible and the actual amount of insurance proceeds made available to the Landlord by its insurer, and any additional costs associated with changes to the Premises desired by the Tenant and permitted by Article 4 shall be paid by the Tenant in the manner reasonably required by the Landlord. Any restoration of the Building or the Premises shall be altered to the extent necessary to comply with then current and applicable laws and codes. The Landlord shall, as soon as possible after any casualty, but in any event no later than sixty (60) days after such casualty, provide to the Tenant a reasonable written estimate ("Contractor's Estimate") from a reputable construction or design professional as to the time frame within which the Landlord will be able to repair the casualty damage and the cost of repairing such damage.

Section 8.2. Landlord's Termination Election.

If the Landlord reasonably determines, based upon the Contractor's Estimate, that (a) the amount of insurance proceeds available to the Landlord is insufficient to cover the cost of restoring the Building, or (b) Landlord will be unable to restore the Building within fifteen (15) months from the date of such casualty, then the Landlord may terminate this Lease by giving notice to the Tenant provided that Landlord also terminates the leases of all other affected and similarly-situated tenants in the Building. Any such termination shall be effective on the date designated in such notice from the Landlord, but in any event not later than sixty (60) days after such notice, and if no date is specified, effective upon the date of the casualty. Failure by the Landlord to give the Tenant notice of termination within sixty (60) days following the occurrence of the casualty shall constitute the Landlord's agreement to restore the Building as contemplated in Section 8.1.

Section 8.3. Tenant's Termination Elections.

If, based upon the Contractor's Estimate, the time period for repairing any casualty damage will exceed fifteen (15) months after the date of any casualty, then the Tenant shall have the right, exercisable by written notice given on or before the date thirty (30) days after the Landlord gives to the Tenant the Contractor's Estimate, to terminate this Lease.

If neither the Landlord nor the Tenant exercise their termination rights, but the Landlord has failed to restore the Building, within fifteen (15) months from the date of the casualty or taking, or the period of restoration set forth in the Contractor's Estimate, such period to be subject, however, to extension where the delay in completion of such work is due to External Causes, the Tenant shall have the right to terminate this Lease at any time after the expiration of such period (in either case, as extended by delay due to External Causes as aforesaid) until the restoration is substantially completed, such termination to take effect as of the date of the Tenant's notice. However, if the Landlord has been diligently prosecuting the repair of all casualty and damage, and if the Landlord reasonably determines at any time, and from time to time, during the restoration, based upon certification by its architect or other design professional, that such restoration will not be able to be completed before the deadline date after which the Tenant may terminate this Lease under this Section 8.3, and the Landlord specifies in a notice to Tenant to such effect a later date that the Landlord estimates will be the date upon which such restoration will be completed, then the Tenant may terminate this Lease within thirty (30) days of the Landlord's notice as aforesaid, failing which the deadline date shall be extended to the date set forth in Landlord's notice (as extended by delay due to External Causes as aforesaid). The Landlord shall exercise reasonable efforts to keep the Tenant advised of the status of restoration work from time to time, and promptly following any request for information during the course of the performance of the restoration work.

Section 8.4. Casualty at Expiration of Lease.

If the Premises shall be damaged by fire or other casualty in such a manner that the Premises cannot, in the ordinary course, reasonably be expected to be repaired within one hundred twenty (120) days from the commencement of repair work and such fire or other casualty occurs within the last twelve (12) months of the Term (as the same may have been extended prior to such fire or other casualty), either party shall have the right, by giving notice to the other not later than sixty (60) days after such fire or other casualty, to terminate this Lease, whereupon this Lease shall terminate as of the date of such notice.

Section 8.5. Eminent Domain.

Except as hereinafter provided, if the Premises, or such portion thereof as to render the balance (if reconstructed to the maximum extent practicable in the circumstances) unsuitable for the Tenant's Permitted Use, shall be taken by condemnation or right of eminent domain, the Landlord or the Tenant shall have the right to terminate this Lease by notice to the other of its desire to do so, provided that such notice is given not later than thirty (30) days after receipt by Tenant of notice of the effective date of such taking. If so much of the Building shall be so taken that the Landlord determines that it would be appropriate to raze or substantially alter the Building, the Landlord shall have the right to terminate this Lease by giving notice to the Tenant of the Landlord's desire to do so not later than thirty (30) days after the effective date of such taking.

Should any part of the Premises be so taken or condemned during the Term, and should this Lease be not terminated in accordance with the foregoing provisions, the Landlord agrees to use reasonable efforts to put what may remain of the Premises into proper condition for use and occupation as nearly like the condition of the Premises prior to such taking as shall be

practicable, subject, however, to applicable laws and codes then in existence. The Landlord shall have no obligation to expend in the aforesaid restoration more than the proceeds of any award received in any condemnation or eminent domain proceeding, or any sum paid in lieu thereof.

Section 8.6. Rent After Casualty or Taking.

If the Premises shall be damaged by fire or other casualty, or partially taken, until the Lease is terminated or the Premises is restored, the Annual Fixed Rent and Additional Rent shall be justly and equitably abated and reduced according to the nature and extent of the loss of use thereof suffered by the Tenant from the date of such fire, other casualty or taking until the Premises shall be restored to substantially the same condition as immediately prior to such fire, other casualty or taking. In the event of a taking which permanently reduces the area of the Premises, a just proportion of the Annual Fixed Rent and applicable Additional Rent shall be abated for the remainder of the Term.

Section 8.7. Temporary Taking.

In the event of any taking of the Premises or any part thereof for a temporary use not in excess of twelve (12) months, (i) this Lease shall be and remain unaffected thereby and Annual Fixed Rent and Additional Rent shall not abate, and (ii) the Tenant shall be entitled to receive for itself such portion or portions of any award made for such use with respect to the period of the taking which is within the Term.

Section 8.8. Taking Award.

Except as otherwise provided in Section 8.7, the Landlord shall have and hereby reserves and accepts, and the Tenant hereby grants and assigns to the Landlord, all rights to recover for damages to the Building and the Land, and the leasehold interest hereby created, and to compensation accrued or hereafter to accrue by reason of such taking, damage or destruction, as aforesaid, and by way of confirming the foregoing, the Tenant hereby grants and assigns to the Landlord, all rights to such damages or compensation. Nothing contained herein shall be construed to prevent the Tenant from prosecuting in any condemnation proceedings a separate claim for relocation expenses and Tenant’s personal property.

ARTICLE 9

DEFAULT

Section 9.1. Tenant’s Default.

Each of the following shall constitute an Event of Default:

(a) Failure on the part of the Tenant to pay the Annual Fixed Rent, Additional Rent or other charges for which provision is made herein on or before the date on which the same become due and payable, if such condition continues for ten (10) days after written notice that the same are due.

(b) Failure on the part of the Tenant to perform or observe any other term or condition contained in this Lease if the Tenant shall not cure such failure within thirty (30) days after written notice from the Landlord to the Tenant thereof, provided that in the case of breaches that are not reasonably susceptible to cure within thirty (30) days through the exercise of due diligence, then so long as the Tenant commences such cure within thirty (30) days, and the Tenant diligently pursues such cure to completion, such breach shall not be deemed to create an Event of Default.

(c) The taking of the estate hereby created on execution or by other process of law; or a judicial declaration that the Tenant, or any guarantor of this Lease, is bankrupt or insolvent according to law; or any assignment of the property of the Tenant, or any guarantor of this Lease, for the benefit of creditors; or the appointment of a receiver, guardian, conservator, trustee in bankruptcy or other similar officer to take charge of all or any substantial part of the property of Tenant, or any guarantor of this Lease, by a court of competent jurisdiction, which officer is not dismissed or removed within (60) days; or the filing of an involuntary petition against the Tenant, or any guarantor of this Lease, under any provisions of the bankruptcy act now or hereafter enacted if the same is not dismissed within sixty (60) days; the filing by the Tenant, or any guarantor of this Lease, of any voluntary petition for relief under provisions of any bankruptcy law now or hereafter enacted.

If an Event of Default shall occur and be continuing , then, in any such case, whether or not the Term shall have begun, Landlord and its agents lawfully may, in addition to any remedies for any preceding Event of Default and any remedies otherwise available at law or equity, immediately or at any time thereafter without further demand or notice in accordance with process of law, enter upon any part of the Premises in the name of the whole or mail or deliver a notice of termination of the Term of this Lease addressed to Tenant at the Premises or any other address herein, and thereby terminate the Term and repossess the Premises as of Landlord’s former estate. At Landlord’s election such notice of termination may be included in any notice of default. Upon such entry or mailing the Term shall terminate, all executory rights of Tenant and all obligations of Landlord will immediately cease, and Landlord may expel Tenant and all persons claiming under Tenant and remove their effects without any trespass and without prejudice to any remedies for arrears of rent or prior breach; and Tenant waives all statutory and equitable rights to its leasehold (including rights in the nature of further cure or redemption, if any to the extent such rights may be waived). If Landlord engages attorneys in connection with any failure to perform by Tenant hereunder, Tenant shall reimburse Landlord for the reasonable fees of such attorneys on demand as Additional Rent. Without implying that other provisions do not survive, the provisions of this Article shall survive the Term or earlier termination of this Lease.

Section 9.2. Damages.

In the event that this Lease is terminated, the Tenant covenants to pay to the Landlord punctually all the sums (“Periodic Payments”) and perform all the obligations which the Tenant covenants in this Lease to pay and to perform in the same manner and to the same extent and at the same time as if this Lease had not been terminated, and all of the Landlord’s expenses in connection with reletting the Premises including, without limitation, all repossession costs, brokerage commissions, fees for legal services and expenses of preparing the Premises for such

releting. However, the Landlord may elect, at any time, to demand in lieu of any further obligations to make Periodic Payments, and payments on account of the Landlord's reletting costs thereafter accruing, as compensation, an amount (the "Lump Sum Payment") equal to the excess, if any, of the discounted present value of the total rent reserved for the then remainder of the Term over the then discounted present fair rental value of the Premises for the then remainder of the Term. The discount rate for calculating such sum under the preceding clause (x) shall be the then current rate of United States Treasury securities having a maturity date as close as possible to the end of the Term (had the Lease not been terminated). In calculating the rent reserved, there shall be included, in addition to the Annual Fixed Rent and all Additional Rent, the value of all other considerations agreed to be paid or performed by the Tenant over the remainder of the Term. Should the parties be unable to agree on a fair rental value for the purposes of determining the Lump Sum Payment under clause (x), above, the matter shall be settled, upon the demand of either party, by reference to the rules of the Boston office of the American Arbitration Association (the "Association"), with a request for a determination in accordance with the rules of the Association as follows:

(i) Landlord and Tenant shall each appoint one independent commercial real estate broker, who shall have been active over the ten (10) year period ending on the date of such appointment in negotiating leases for and in commercial office properties in the Boston, Massachusetts market. The determination of the brokers shall be limited solely to the issue of whether Landlord's submitted Lump Sum Payment represents the fair rental value for the Premises as determined by the brokers, taking into account all relevant elements, and each shall determine a sum best representing the Lump Sum Payment.

(ii) If the conclusion of the two brokers so appointed is not dispositive, then the two brokers shall within ten (10) days of the date of the appointment of the latter appointed broker agree upon and appoint a third broker who shall be qualified under the same criteria set forth hereinabove for qualification of the initial two brokers.

(iii) The third broker shall, within twenty (20) days of his or her appointment determine the Lump Sum Payment by selecting one of the determinations of either of the two brokers so appointed, and shall notify Landlord and Tenant thereof in writing.

Each party shall bear the costs of its own broker if only two (2) brokers are involved; if there is a third broker involved, the cost of such third broker shall be shared equally by the parties.

In calculating the amounts to be paid by the Tenant under the foregoing covenant, the Tenant shall be credited with the net proceeds of any rent obtained by reletting the Premises, after deducting all the Landlord's expenses in connection with such reletting, including, without limitation, all repossession costs, brokerage commissions, fees for legal services and expenses of preparing the Premises for such reletting, provided that Tenant shall never be entitled to receive any portion of the re-letting proceeds, even if the same exceed the ¿lit originally due hereunder but Tenant shall be credited with such excess amount to offset its obligation to Landlord, and Landlord shall use commercially reasonable efforts to relet the Premises. In connection with such efforts, Landlord may (i) relet the Premises, or any part or parts thereof, for a term or terms which may, at the Landlord's option, exceed or be equal to or less than the period which would otherwise have constituted the balance of the Term, and may grant such concessions and free

rent as the Landlord in its reasonable commercial judgment considers advisable or necessary to relet the same, (ii) make such alterations, repairs and improvements in the Premises as the Landlord in its reasonable commercial judgment considers advisable or necessary to relet the same, and (iii) any obligation to relet imposed by law shall be subject to the reasonable requirements of Landlord f§ lease to high quality tenants on such terms (based on then-market standards) as Landlord may from time to time deem appropriate and to develop the Building and Park in a harmonious manner with an appropriate mix of uses, tenants, floor areas and terms of tenancies, and the like, and Landlord shall not be obligated to relet the Premises to any party to whom Landlord or its affiliate may desire to lease other available space in the Park.. No action of the Landlord in accordance with foregoing or failure to relet or to collect rent under reletting shall operate to release or reduce the Tenant's liability except as provided herein. The Landlord shall be entitled to seek to rent other properties of the Landlord prior to reletting the Premises without being in breach of any obligation to the Tenant.

Section 9.3. Cumulative Rights.

The specific remedies to which either party may resort under the terms of this Lease are cumulative and, except as expressly set forth herein, are not intended to be exclusive of any other remedies or means of redress to which it may be lawfully entitled in case of any breach or threatened breach by the other party of any provisions of this Lease. In addition to the other remedies provided in this Lease, each party shall be entitled to seek the restraint by injunction of the violation or attempted or threatened violation of any of the covenants, conditions or provisions of this Lease or to a decree compelling specific performance of any such covenants, conditions or provisions. Nothing contained in this Lease shall limit or prejudice the right of the Landlord to prove for and obtain in proceedings for bankruptcy, insolvency or like proceedings by reason of the termination of this Lease, an amount equal to the maximum allowed by any statute or rule of law in effect at the time when, and governing the proceedings in which, the damages are to be proved, whether or not the amount be greater, equal to, or less than the amount of the loss or damages referred to above.

Landlord shall not be required to serve Tenant with any notices or demands as a prerequisite to its exercise of any of its rights or remedies under this Lease, other than those notices and demands specifically required under this Lease. Tenant expressly v of any statutory demand or notice which is a prerequisite to Landlord's commandment of eviction proceedings against Tenant, including the demands and notices specified in any applicable state statute or case law.

Section 9.4. Landlord's Self-help.

If there shall be an Event of Default, or if emergency circumstances should exist where, upon the giving of notice or passage of time, such circumstances would constitute an Event of Default, then the Landlord shall have the right, but not the obligation, after the giving by the Landlord of at least ten (10) days' prior notice thereof to the Tenant (except in case of emergency circumstances in which case no prior notice need be given), to perform such obligation. In the event the Landlord exercises its rights under this Section 9.4 in case of emergency, the Landlord shall notify the Tenant as soon as reasonably possible after the taking of such action. The Landlord may exercise its rights under this Section without waiving any other of its rights or releasing the Tenant from any of its obligations under this Lease.

Section 9.5. Enforcement Expenses: Litigation.

If either party hereto, is made or becomes a party to any litigation commenced by or against the other party by or against a third party, or incurs costs or expenses related to such litigation, involving any part of the Property and the enforcement of any of the rights, obligations or remedies of such party, then the party becoming involved in any such litigation because of a claim against such other party hereto shall receive from such other party hereto all costs and reasonable attorneys' fees incurred by such party in such litigation. Landlord shall pay all reasonable attorney's fees incurred by Tenant in connection with any legal action concerning an alleged breach of this Lease to the extent that Tenant is the prevailing party. Tenant shall pay all reasonable attorney's fees incurred by Landlord in connection with any legal action concerning an alleged breach of this Lease to the extent that Landlord is the prevailing party.

LANDLORD AND TENANT WAIVE TRIAL BY JURY IN ANY ACTION TO WHICH THEY ARE PARTIES UNDER THIS LEASE.

Section 9.6. Late Charges: Interest on Overdue Payments.

(a) In the event that any payment of Annual Fixed Rent or Additional Rent shall remain unpaid for a period of ten (10) days following notice by the Landlord to the Tenant that such payment is overdue, there shall become due to the Landlord from the Tenant, as Additional Rent and as compensation for the Landlord's extra administrative costs in investigating the circumstances of late rent, a late charge of two percent (2%) of the amount overdue.

(b) Any Annual Fixed Rent and Additional Rent or other amount which is due from either party to the other party which is not paid within ten (10) days after the same is due and payable shall bear interest from the date due until paid at the variable rate (the "Default Interest Rate") equal to the annual rate from time to time announced by Bank of America as its base rate, plus two percent (2%), or if such rate can no longer be determined, the annual prime rate from time to time announced by The Wall Street Journal, plus four percent (4%).

Section 9.7. Landlord's Right to Notice and Cure.

The Landlord shall in no event be in default in the performance of any of the Landlord's obligations hereunder unless and until the Landlord shall have failed to perform such obligations within thirty (30) days such additional time as is reasonably required to correct any such default, after written notice by the Tenant to the Landlord expressly specifying wherein the Landlord has failed to perform any such obligation.

ARTICLE 10

MORTGAGEES' RIGHTS

Section 10.1. Subordination.

At the election of the holder of any mortgage (which term for the purpose of this Article shall include a "deed of trust," or similar financing encumbrance) or of any ground lease encumbering the Landlord's interest in the Property, this Lease shall be subject and subordinate to the lien thereof, so that the rights of any such mortgagee or ground lessor shall be superior to all rights hereby or hereafter vested in the Tenant, subject however to Section 10.5 hereof, but upon the condition and solely to the extent that such mortgagee or ground lessor, including any future mortgagee or ground lessee from time to time hereunder, shall have entered into a subordination non-disturbance and attornment agreement ("SNDA") with Tenant in substantially the form attached hereto as Exhibit I (if with the current mortgagee as of the Term Commencement Date) or Exhibit H (if with the current ground lessor). Any costs imposed by such mortgagee or ground lessor attendant to obtaining any such SNDA shall be the responsibility of Landlord. The form of SNDA attached hereto as Exhibit I is acceptable to Tenant in connection with any mortgage to which this Lease shall be subordinated. The form of SNDA attached hereto as Exhibit H is acceptable to Tenant in connection with any ground lease to which this Lease shall be subordinated. Landlord shall provide Tenant with an SNDA from its current mortgagee and the current ground lessor in the forms attached to this Lease as Exhibit I and H, respectively, and from any future mortgagee or ground lessor in the same form or other form acceptable to Tenant in its commercially reasonable judgment.

Section 10.2. INTENTIONALLY OMITTED.

Section 10.3. INTENTIONALLY OMITTED.

Section 10.4. Estoppel Certificates.

The Tenant shall from time to time, upon not less than ten (10) days' prior written request by the Landlord, execute, acknowledge and deliver to the Landlord a statement in writing certifying to the Landlord or an independent third party, with a true and correct copy of this Lease attached thereto, together with all amendments thereto, to the extent such statements continue to be true and accurate, (i) that this Lease is unmodified and in full force and effect (or, if there have been any modifications, that the same is in full force and effect as modified and stating the modifications); (ii) that the Tenant has no actual knowledge of any defenses, offsets or counterclaims against its obligations to pay the Annual Fixed Rent and Additional Rent and to perform its other covenants under this Lease (or if there are any defenses, offsets, or counterclaims, setting them forth in reasonable detail); (iii) that there are no actually known uncured defaults of the Landlord or the Tenant under this Lease (or if there are actually known defaults, setting them forth in reasonable detail); (iv) the dates to which the Annual Fixed Rent, Additional Rent and other charges have been paid; (v) that the Tenant has accepted, and is in full possession of the Premises, including all improvements, additions and alterations thereto required to be made by Landlord under the Lease (except to the extent stated); (vi) that the Landlord has satisfactorily complied with all of the requirements and conditions precedent to the

occurrence of the Rent Commencement Date (except to the extent stated); (vii) that the Tenant has been in occupancy since the Term Commencement Date and paying rent since the specified dates (except to the extent stated); (viii) that no monetary or other considerations, including, but not limited to, rental concessions for Landlord, special tenant improvements or Landlord's assumption of prior lease obligations of Tenant have been granted to Tenant by Landlord for entering into Lease (except as set forth in this Lease or as otherwise specified in such estoppel); (ix) that the Tenant has not received written notice of a prior assignment, hypothecation, or pledge of rents or of the Lease (except to the extent stated); (x) that the Lease represents the entire agreement between Landlord and Tenant; (xi) that any notice may or shall be given in accordance with the requirements therefor as provided in the Lease from time to time; and (xii) such factual other matters with respect to the Tenant and this Lease as the Landlord may reasonably request. Any statement delivered pursuant to this Section may be relied upon by any prospective purchaser, mortgagee, trustee or ground lessor of the Premises or any interest therein, and shall be binding on the Tenant.

Landlord shall from time to time, upon not less than twenty (20) days' prior written request by the Tenant, execute, acknowledge and deliver to the Tenant a statement in writing certifying to the Tenant or an independent third party, with a true and correct copy of this Lease attached thereto, together with all amendments thereto, to the extent such statements continue to be true and accurate (i) that this Lease is unmodified and in full force and effect (or, if there have been any modifications, that the same is in full force and effect as modified and stating the modifications); (ii) that the Landlord has no knowledge of any defenses, offsets or counterclaims against its obligations to perform its covenants under this Lease (or if there are any defenses, offsets, or counterclaims, setting them forth in reasonable detail); (iii) that there are no known uncured defaults of the Tenant or the Landlord under this Lease (or if there are known defaults, setting them forth in reasonable detail); (iv) the dates to which the Annual Fixed Rent, Additional Rent and other charges have been paid; (v) that the Tenant is in full possession of the Premises; (vi) that Landlord has no notice of a prior assignment of the Lease or sublease of space therein; (vii) that the Lease represents the entire agreement between Landlord and Tenant; (viii) that any notice may or shall be given in accordance with the requirements therefor as provided in the Lease from time to time;; and (xii) such other factual matters with respect to the Tenant and this Lease as the Tenant or such independent third party may reasonably request. Any statement delivered pursuant to this Section may be relied upon by any prospective mortgagee, assignee or sublessee of Tenant and shall be binding on the Landlord.

Section 10.5. Assignment of Rents.

With reference to any assignment by the Landlord of the Landlord's interest in this Lease, or the rents payable hereunder, conditional in nature or otherwise, which assignment is made to the holder of a mortgage or a ground lessor on property which includes the Premises, the Tenant agrees;

(a) That the execution thereof by the Landlord, and the acceptance thereof by the holder of such mortgage or ground lessor, shall never be treated as an assumption by such holder or ground lessor of any of the obligations of the Landlord hereunder, unless such holder or ground lessor shall, by notice sent to the Tenant, specifically make such election; and

(b) That, except as aforesaid, such holder or ground lessor shall be treated as having assumed the Landlord's obligations hereunder only upon foreclosure of such holder's mortgage or the taking of possession of the Property, or, in the case of a ground lessor, the termination of the ground lease.

ARTICLE 11

SECURITY DEPOSI

(a) Security Deposit in Cash or Letter of Credit. Upon the execution and delivery of this Lease, Tenant shall deliver to Landlord as security for the performance of the obligations of Tenant hereunder, either a cash deposit or a letter of credit in the Security Deposit amount specified in Exhibit A in accordance with this Section (as renewed, replaced, increased and/or reduced pursuant to this Section, the "Letter of Credit"). If Tenant elects to deliver a cash deposit upon the execution and delivery of this Lease, Tenant may at any time thereafter replace such cash deposit with a Letter of Credit meeting the requirements of this Section 11(a), and in such event, Landlord shall return the cash security deposit to Tenant within five (5) business days. If Tenant elects to deliver a Letter of Credit, such Letter of Credit shall be in such form as Landlord may reasonably approve. If there is more than one Letter of Credit so delivered by Tenant, such Letters of Credit shall be collectively hereinafter referred to as the "Letter of Credit". The Letter of Credit (i) shall be irrevocable and shall be issued by a commercial bank reasonably acceptable to Landlord, (ii) shall require only the presentation to the issuer of a certificate of the holder of the Letter of Credit stating either (a) that a default has occurred under this Lease after the expiration of any applicable notice and cure period (or stating that transmittal of a default notice is barred by applicable bankruptcy or other law if such is the case), or (b) stating that Tenant has not delivered to Landlord a new Letter of Credit having a commencement date immediately following the expiration of the existing Letter of Credit in accordance with the requirements of the Lease, (iii) shall be payable to Landlord and its successors in interest as the Landlord and shall be freely transferable (at no cost to Tenant) to any such successor or any lender holding a collateral assignment of Landlord's interest in the Lease, (iv) shall be for an initial term of not less than one year and contain a provision that such term shall be automatically renewed for successive one-year periods unless the issuer shall, at least thirty (30) days prior to the scheduled expiration date, give Landlord written notice of such nonrenewal, and (v) shall otherwise be in form and substance reasonably acceptable to Landlord. Notwithstanding the foregoing, the term of the Letter of Credit for the final period of the Term shall be for a term ending not earlier then the date forty-five (45) days after the last day of the Term.

If Tenant shall be in default under the Lease, after the expiration of any applicable not or cure period (or if transmittal of a default or other notice is stayed or barred by applicable bankruptcy or other law), Landlord shall be entitled to draw upon the Letter of Credit to the extent reasonably necessary to cure such default. If, not less than thirty (30) days before the scheduled expiration of the Letter of Credit, Tenant has not delivered to Landlord a new Letter of Credit having a commencement date immediately following the expiration of the existing Letter of Credit in accordance with this Section, Landlord shall also have the right to draw upon the full amount of the Letter of Credit without giving any further notice to Tenant. Landlord may, but shall not be obligated to, apply the amount so drawn to the extent necessary to cure Tenant's default under the Lease. Any funds drawn by Landlord on the Letter of Credit and not applied

against amounts due hereunder shall be held by Landlord as a cash security deposit, provided that Landlord shall have no fiduciary duty with regard to such amounts, shall have the right to commingle such amounts with other funds of Landlord, and shall pay no interest on such amounts. After any application of the Letter of Credit by Landlord in accordance with this paragraph, Tenant shall reinstate the Letter of Credit to the amount then required to be maintained hereunder, within thirty (30) days of demand. Within forty-five (45) days after the expiration or earlier termination of the Term the Letter of Credit and any cash security deposit then being held by Landlord, to the extent not applied, shall be returned to the Tenant provided that no Event of Default is then continuing.

(b) Pledge.

The Landlord may pledge its right and interest in and to the cash deposit or Letter of Credit to any mortgagee or ground lessor and, in order to perfect such pledge, have such cash deposit or Letter of Credit held in escrow by such mortgagee or ground lessee or grant such mortgagee or ground lessee a security interest therein. In connection with any such pledge or grant of security interest by the Landlord to a mortgagee or ground lessee ("Pledgee"), Tenant covenants and agrees to cooperate as reasonably requested by the Landlord at no additional cost to Tenant, in order to permit the Landlord to implement the same on terms and conditions reasonably required by such Pledgee.

(c) Transfer of Security Deposit.

In the event of a sale or other transfer of the Building or transfer of this Lease, Landlord shall transfer the cash deposit or Letter of Credit to the transferee at no cost to Tenant, and Landlord shall thereupon be released by Tenant from all liability for the return of such security. The provisions hereof shall apply to every transfer or assignment made of the security to such a transferee. Tenant further covenants that it will not assign or encumber or attempt to assign or encumber the Letter of Credit or the proceeds thereof, and that neither Landlord nor its successors or assigns shall be bound by any assignment, encumbrance, attempted assignment or attempted encumbrance.

ARTICLE 12

MISCELLANEOUS

Section 12.1. Notice of Lease.

Tenant agrees not to record this Lease but both parties shall execute and deliver (i) a memorandum of this Lease in form appropriate for recording or registration, (ii) an instrument acknowledging the Commencement Date of the Term, and (iii) if this Lease is terminated before the Term expires, an instrument in such form acknowledging the date of termination.

Section 12.2. Notices.

Whenever any notice, approval, consent, request, election, offer or acceptance is given or made pursuant to this Lease, it shall be in writing. Communications and payments shall be addressed, if to the Landlord, at the Landlord's Address for Notices as set forth in Exhibit A or at

such other address as may have been specified by prior notice to the Tenant; and if to the Tenant, (i) until the Rent Commencement Date, at the Tenant's Original Address (or at such other place as may have been specified by prior notice to the Landlord) and at the Tenant's Address for Notices as set forth in Exhibit A. and (ii) from and after the Rent Commencement Date, at the Tenant's Address for Notices as set forth in Exhibit A (or at such other place as may have been specified by prior notice to the Landlord). Any communication so addressed shall be deemed duly given on the earlier of (i) the date received, or (ii) on the next business day if sent by a nationally recognized overnight courier service. If the Landlord by notice to the Tenant at any time designates some other person to receive payments or notices, all payments or notices thereafter by the Tenant shall be paid or given to the agent designated until notice to the contrary is received by the Tenant from the Landlord. Notices to either party under this Lease may be given by legal counsel to such party.

Section 12.3. Successors and Limitation on Liability.

The obligations of this Lease shall run with the land, and this Lease shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns, except that the original Landlord named herein and each successor Landlord shall be liable only for obligations accruing during the period of its ownership or otherwise reflected in a certificate delivered to it by Tenant pursuant to section 10.4 (or would have been reflected in such a certificate had one been timely requested). Neither the Tenant, nor anyone claiming by, under or through the Tenant, shall be entitled to obtain any judgment in enforcing the terms and conditions of this Lease creating personal liability on the part of the Landlord or enforcing any obligations of the Landlord against any assets of the Landlord other than its interest in the Property, and proceeds therefrom and, without limitation of the foregoing, in no event shall any personal liability arise on the part of any of the Landlord's officers, employees, directors or shareholders. Likewise, no personal liability shall arise on the part of the Tenant's officers, employees, directors or shareholders, as this Lease shall create liability on the part of the Tenant and not personal liability on the part of such officers, employees, directors or shareholders.

Section 12.4. Waivers.

The failure of the Landlord or the Tenant to seek redress for violation of, or to insist upon strict performance of, any covenant or condition of this Lease, shall not be deemed a waiver of such violation nor prevent a subsequent act, which would have originally constituted a violation, from having all the force and effect of an original violation. The receipt by the Landlord of Annual Fixed Rent or Additional Rent with knowledge of the breach of any covenant of this Lease shall not be deemed a waiver of such breach. No provision of this Lease shall be deemed to have been waived by the Landlord or the Tenant, as the case may be, unless such waiver be in writing signed by the Landlord or the Tenant, as the case may be. No consent or waiver, express or implied, by the Landlord or Tenant to or of any breach of any agreement or duty shall be construed as a waiver or consent to or of any other breach of the same or any other agreement or duty.

Section 12.5. Acceptance of Partial Payments of Rent.

No acceptance by either party of a lesser sum than the amount then due to such party shall be deemed to be other than a partial installment of such rent due, nor shall any endorsement or statement on any check or any letter accompanying any check or payment as rent be deemed an accord and satisfaction, and either party may accept such check or payment without prejudice to the other party's right to recover the balance of such installment or pursue any other remedy in this Lease provided. The delivery of keys to any employee of the Landlord or to the Landlord's agent or any employee thereof shall not operate as a termination of this Lease or a surrender of the Premises.

Section 12.6. Interpretation and Partial Invalidity.

If any term of this Lease, or the application thereof to any person or circumstances, shall to any extent be invalid or unenforceable, the remainder of this Lease, or the application of such term to persons or circumstances other than those as to which it is invalid or unenforceable, shall not be affected thereby, and each term of this Lease shall be valid and enforceable to the fullest extent permitted by law. The titles of the Articles are for convenience only and not to be considered in construing this Lease. This Lease contains all of the agreements of the parties with respect to the subject matter thereof and supersedes all prior dealings between them with respect to such subject matter.

Section 12.7. Quiet Enjoyment.

So long as no Event of Default has occurred and is continuing, the Tenant shall peaceably and quietly have, hold and enjoy the Premises free of any claims by, through or under, or superior title to, the Landlord including, without limitation, any ground lessor, mortgagee, or manager of the Property.

Section 12.8. Brokerage.

Each party represents and warrants to the other that it has had no dealings with any broker or agent other than the Brokers in connection with this Lease and shall indemnify and hold harmless the other from claims for any brokerage commission (other than by the Brokers) arising out a breach of the foregoing representations. Landlord shall be responsible for any commission due to the Brokers pursuant to the terms of a separate agreement.

Section 12.9. Surrender of Premises and Holding Over.

The Tenant shall surrender possession of the Premises on the last day of the Term and the Tenant waives the right to any notice of termination or notice to quit at the end of the Term. The Tenant covenants that upon the expiration or sooner termination of this Lease, it shall, without notice, deliver up and surrender possession of the Premises broom clean and in the same condition in which the Tenant has agreed to keep the same during the continuance of this Lease and in accordance with the terms hereof, normal wear and tear and damage by fire or other casualty excepted, first removing therefrom all personal property of the Tenant and any alterations or additions required to be removed pursuant to Section 4.2, and repairing all damage caused by such removal. Upon the expiration of this Lease or if the Premises should be

abandoned by the Tenant, or this Lease should terminate for any cause, and at the time of such expiration, vacation, abandonment or termination, the Tenant or Tenant's agents, subtenants or any other person should leave any property of any kind or character on or in the Premises after having vacated the Premises, the fact of such leaving of property on or in the Premises shall be conclusive evidence of intent by the Tenant, and individuals and entities deriving their rights through the Tenant, to abandon such property so left in or upon the Premises, and such leaving shall constitute abandonment of the property. Landlord shall have the right and authority without notice to the Tenant or anyone else, to remove and destroy, or to sell or authorize disposal of such property, or any part thereof, without being in any way liable to the Tenant therefor and the proceeds thereof shall belong to the Landlord as compensation for the removal and disposition of such property.

If the Tenant fails to surrender possession of the Premises upon the expiration or sooner termination of this Lease, then Tenant shall be deemed a tenant at sufferance only and Tenant shall pay to Landlord, as rent for any period after the expiration or sooner termination of this Lease an amount equal to the higher of one hundred fifty percent (150%) of the Annual Fixed Rent to be paid under this Lease as applied to any period in which the Tenant shall remain in possession, in each case together with all Additional Rent required under this Lease. Acceptance by the Landlord of such payments shall not constitute a consent to a holdover hereunder or result in a renewal or extension of the Tenant's rights of occupancy. Such payments shall be in addition to and shall not affect or limit the Landlord's right of re-entry, Landlord's right to collect such damages as may be available at law (other than consequential damages), or any other rights of the Landlord under this Lease or as provided by law.

Prior to the expiration of the Lease, Tenant shall clean and otherwise decommission all interior surfaces (including floors, walls, ceilings and counters), piping, supply lines, waste lines and plumbing in or serving the Premises, and all exhaust or other ductwork in or serving the Premises, in each case that has carried, released or otherwise been exposed to any Hazardous Material due to Tenant's use or occupancy of the Premises, and shall otherwise clean the Premises so as to permit the report hereinafter called for by this Section 11.10 to be issued. Prior to the expiration of this Lease (or within thirty [30] days after any earlier termination), Tenant, at Tenant's expense, shall obtain for Landlord a report addressed to Landlord (and, at Tenant's election, Tenant) by a reputable licensed environmental engineer or industrial hygienist that is designated by Tenant and acceptable to Landlord in Landlord's reasonable discretion, which report shall be based on the environmental engineer's or industrial hygienist's inspection of the Premises and shall state, to the Landlord's reasonable satisfaction, that (a) the Hazardous Materials described in the first sentence of this paragraph, to the extent if any, existing prior to such decommissioning, have been removed in accordance with applicable laws; (b) all Hazardous Materials described in the first sentence of this paragraph, if any, have been removed in accordance with applicable laws from the interior surfaces of the Premises (including floors, walls, ceilings, and counters), piping, supply lines, waste lines and plumbing, and all such exhaust or other ductwork in the Premises, may be re-used by a subsequent tenant or disposed of in compliance with applicable laws without incurring special costs or undertaking special procedures for demolition, disposal, investigation, assessment, cleaning or removal of such Hazardous Materials and without giving notice in connection with such Hazardous Materials; and (c) the Premises may be re-occupied for office or laboratory use, demolished or renovated without incurring special costs or undertaking special procedures for disposal, investigation,

assessment, cleaning or removal of Hazardous Materials described in the first sentence of this paragraph and without giving notice in connection with Hazardous Materials. Further, for purposes of clauses (b) and (c), "special costs" or "special procedures" shall mean costs or procedures, as the case may be, that would not be incurred but for the nature of the Hazardous Materials as Hazardous Materials instead of non-hazardous materials. The report shall also include reasonable detail concerning the clean-up measures taken, the clean-up locations, the tests run and the analytic results.

If Tenant fails to perform its obligations under this Section 11.10, without limiting any other right or remedy, Landlord may, on five (5) business days' prior written notice to Tenant perform such obligations, at Tenant's expense, and Tenant shall, within ten (10) days of demand, reimburse Landlord for all reasonable out-of-pocket costs and expenses incurred by Landlord in connection with such work. Tenant's obligations under this Section 11.10 shall survive the expiration or earlier termination of this Lease. In addition, at Landlord's election, Landlord may inspect the Premises and/or Property for Hazardous Materials at Landlord's cost and expenses, within sixty (60) days of Tenant's surrender of the Premises at the expiration or earlier termination of this Lease. Tenant shall pay for all such costs and expenses incurred by Landlord in connection with such inspection if such inspection reveals that a release or threat of release of Hazardous Materials exists at the Property or Premises as a result of the acts or omission of Tenant, its officers, employees, contractors, and agents (except to the extent resulting from the acts or omissions of Landlord or Landlord's agents, employees or contractors).

Section 12.10. Financial Reporting.

Tenant shall from time to time (but at least annually) on the anniversary of the Lease Landlord with financial statements of Tenant, together with related statements of Tenant's or its parent's operations for the most recent fiscal year then ended, certified to Landlord by an independent certified public accounting firm. If Tenant or its parent is a public company, in lieu of such certification, Landlord may refer to Tenant's or its parent's website for such information.

Section 12.11. No Consequential Damages.

Notwithstanding anything in this Lease to the contrary, in no event shall either Landlord or Tenant be liable to the other for consequential damages.

Section 12.12. Governing Law.

This Lease shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts.

Section 12.13. Signage.

Landlord, at its expense, shall provide a listing identifying Tenant on all Building tenant directories. Tenant shall be responsible for providing, at its sole cost and expense, signage at the entry to the Premises and any signage within the Premises. All signage pursuant to this Section 12.13 shall be consistent with Landlord's Signage and Design Standard and is subject to the approval of applicable governmental authorities.

Section 12.14. Ground Lease.

This Lease is in all respects subject to the ground lease (the "Ground Lease") between the Landlord as lessee and Massachusetts Institute of Technology ("MIT") as lessor dated as of August 20, 1986. If any provision of the Ground Lease shall be inconsistent with the provisions of this Lease, the provisions of the Ground Lease shall be deemed to limit the provisions hereof, except as are expressly otherwise provided in a written agreement signed by MIT, the Landlord and the Tenant. This Lease is subject to the execution and delivery of a Non-Disturbance Agreement from MIT in favor of Tenant in the form attached hereto as Exhibit H.

Section 12.15. Cambridge Employment Plan.

The Tenant agrees to sign an agreement with the Employment and Training Agency designated by the City Manager of the City of Cambridge as provided in subsections (a) - (g) of Section 24-4 of Ordinance Number 1005 of the City of Cambridge, adopted April 23, 1984 (found at Section 2.66.040, Code of Ordinances, City of Cambridge).

Section 12.16. Solvent Storage

Landlord shall manage the allocation of solvent storage quantities for tenants in the Building. Tenant's allocation thereof shall be determined in accordance with its proportionate share of the Building's solvent storage capacity. All solvent storage by Tenant shall be subject to Tenant receiving the required governmental permitting.

Section 12.17. Protection of REIT Status.

In the event that Landlord determines that any of the financial obligations of Tenant to Landlord as set forth in this Lease might (a) fail to quality as "rents from real property" within the meaning of Section 856(d) of the Internal Revenue Code of 1986, as amended (the "Code"), or (b) otherwise jeopardize the status of any of Landlord's affiliates, including Forest City Realty Trust, Inc., as a "real estate investment trust" ("REIT") within the meaning of Section 856 of the Code, then, at Landlord's option, Landlord may, in its sole discretion, assign any of its rights and obligations under this Lease to a designee chosen by Landlord for such purpose (which, in each case, shall be an affiliate of Landlord), or cause one or more such designees (which, in each case, shall be an affiliate of Landlord) to perform such activities to the extent required to maintain such status as a REIT, provided, however, that any assignment permitted pursuant to this Section shall not increase Tenant's obligations nor decrease Tenant's rights in this Lease, and shall not result in the imposition of any additional charge or expense upon Tenant.

Section 12.18. Authority.

Landlord represents and warrants that the individual executing this Lease on behalf of Landlord is duly authorized to execute and deliver this Lease on behalf of said entity, that said entity is duly authorized to enter into this Lease, and that this Lease is enforceable against said entity in accordance with its terms. Tenant represents and warrants that the individual executing this Lease on behalf of Tenant is duly authorized to execute and deliver this Lease on behalf of said entity, that said entity is duly authorized to enter into this Lease, and that this Leas enforceable against said entity in accordance with its terms.

IN WITNESS WHEREOF, this Lease has been executed and delivered as of the date first above written as a sealed instrument.

LANDLORD:

UP 26 LANDSDOWNE, LLC, a Delaware limited liability company

By: /s/ Michael Farley
Name: Michael Farley
Title: Vice President

BEAM THERAPEUTICS, Inc., a Delaware corporation

By: /s/ John Evans
Name: John Evans
Title: CEO

EXHIBIT A

BASIC LEASE TERMS

Building:	26 Landsdowne Street, Cambridge, MA
Premises:	The Premises shall consist of a portion of the first floor and the entire second floor of the Building, and shall be comprise of approximately 38,203 rentable square feet ("RSF"), IOCE as follows: Floor 1: 16,518 RSF Floor 2: 21,685 RSF Total: 38,203 RSF
Annual Fixed Rent for the Term:	$78.00 per RSF ("Triple Net") during the first Lease Year, with annual increases of three percent (3%) per the terms of Section 3.1 hereof.
Initial Term:	Approximately Ten (10) years and seven (7) months commencing on the Term Commencement Date and expiring on the last day of the month in which the tenth (10th) anniversary of the Rent Commencement Date occurs, as set forth and in accordance with the terms of Section 2.5 hereof.
Extension Option:	Tenant shall have one (1) option to extend the term of this Lease for an additional five (5) years, as described in Section 2.6 of the Lease.
Term Commencement Date:	The date that Landlord delivers the Premises to Tenant, as more fully set forth in Section 2.5.
Rent Commencement Date:	The date which is the earlier to occur of (i) Tenant's occupancy of any portion of the Premises for business purposes, or (ii) seven (7) months after the Term Commencement Date as determined in accordance with Section 2.5.
Leasehold Improvements Allowance:	$160.00 per RSF of Premises floor area, as more fully set forth in Exhibit E-1.
Total Rentable Area of Building:	102,876 RSF.
Security Deposit:	Six (6) months of the Annual Fixed Rent due in the first Lease Year ($1,489,917.00), which shall be provided pursuant to the terms of Article 11.

Parking Privileges:	Commencing on the Rent Commencement Date and continuing through the Term, Tenant shall be entitled to use and shall pay for 1.5 parking passes per 1,000 RSF (which shall initially be fifty-seven (57) parking passes) in accordance with Section 2.4 of the Lease. Subject to availability, Tenant shall have the right to lease additional parking spaces from Landlord; such lease for additional parking spaces shall be on a month-to-month basis at the then-prevailing fair market value for such parking passes.
Permitted Uses:	Office and/or research and development, laboratory, and vivarium uses consistent with current zoning for the Premises, and customary accessory uses supporting the foregoing.
Tenant's Address for Notices:	Beam Therapeutics, Inc. 26 Landsdowne Street Cambridge, MA 02139 Attention: John Evans
With a copy to:	Ropes & Gray LLP Prudential Tower, 800 Boylston Street Boston, MA 02199-3600 Attention: Marc A. Rubenstein, Esq.
Landlord's Original Address:	UP 26 Landsdowne, LLC 1100 Terminal Tower 50 Public Square Cleveland, Ohio 44130 Attention: General Counsel
Landlord's Address for Notices:	UP 26 Landsdowne, LLC c/o Forest City Commercial Group, LLC 38 Sidney Street, Suite 180 Cambridge, Massachusetts 02139-4234 Attention: Asset Manager
Tenant Proportionate Share:	37.13%

EXHIBIT B

Legal Description

The real property, with the improvements thereon, situated in the City of Cambridge, County of Middlesex, Commonwealth of Massachusetts, described as follows:

Parcel One:

A parcel of land situated in the City of Cambridge, Middlesex County, Commonwealth of Massachusetts as 26 Landsdowne Street, being more particularly bounded and described as follows:

Beginning at the intersection of the southeasterly line of Landsdowne Street and the southwesterly line of Cross Street;

Thence running S 51 degrees 3’ 50” E, along said southwesterly line of Cross Street, a distance of 205. to Purrington Street;

Thence running S 59 degrees 10’ 19” W, along the northwesterly line of said Purrington Street, a distance of 190.20 feet, to a point;

Thence running by land, now or formerly of Massachusetts Institute of Technology, the following three (3) courses:

N 51 degrees 31’ 50” W, a distance of 53.21 feet, to a point; N 59 degrees 10’9” E, a distance of 35.23 feet, to a point; and N 51 degrees 31’ 50” W, a distance of 151.79 feet, to a point At the aforesaid southeasterly line of Landsdowne Street

Thence running N 59 degrees 10’ 19” E, along said southeasterly line of Landsdowne Street, a distance of 154.97 feet, to the point of beginning.

The above described parcel contains 31,471, more or less, of square feet.

Parcel Two:

Together with the benefit of the easements set forth in Parking Easement Agreement from University Park Phase II Limited Partnership to Forest City Cambridge, Inc. dated June 12, 2000 and recorded with the Middlesex South District Registry of Deeds in Book 31553, Page 48, as affected by Assignment of Parking Easement Agreement by Forest City Cambridge, Inc. to UP 26 Landsdowne, LLC dated February 22, 2010 and recorded with said Deeds in Book 54324, Page 258.

Parcel Three:

Together with the benefit of the easements set forth in the Drain Easement from New England Confectionary Company to Massachusetts Institute of Technology dated June 13, 2000 and recorded with said Deeds in Book 1696, Page 282, subject, however, to the terms and provisions of said Drain Easement.

Parcel Four:

Together with the benefit of the appurtenant rights and non-exclusive easements which constitute or affect rights in real property as set forth in the University Park at MIT Declaration of Covenants, dated December 15, 1997, recorded with said Deeds in Book 28297, Page 479.

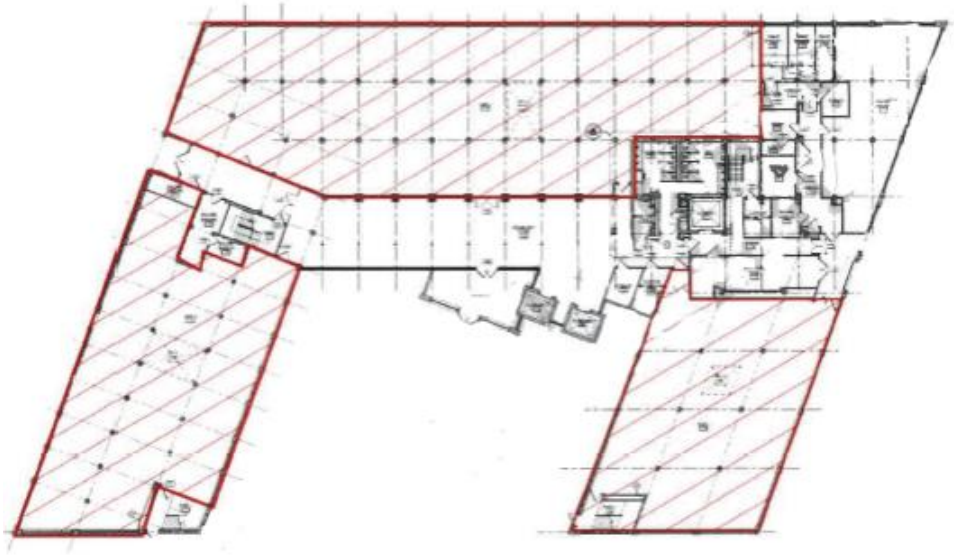
Being the same premises conveyed of record to Mortgagor by the Memorandum of Ground Lease Assignment, dated February 22, 2010, and recorded with said Deeds in Book 54324, Page 252.

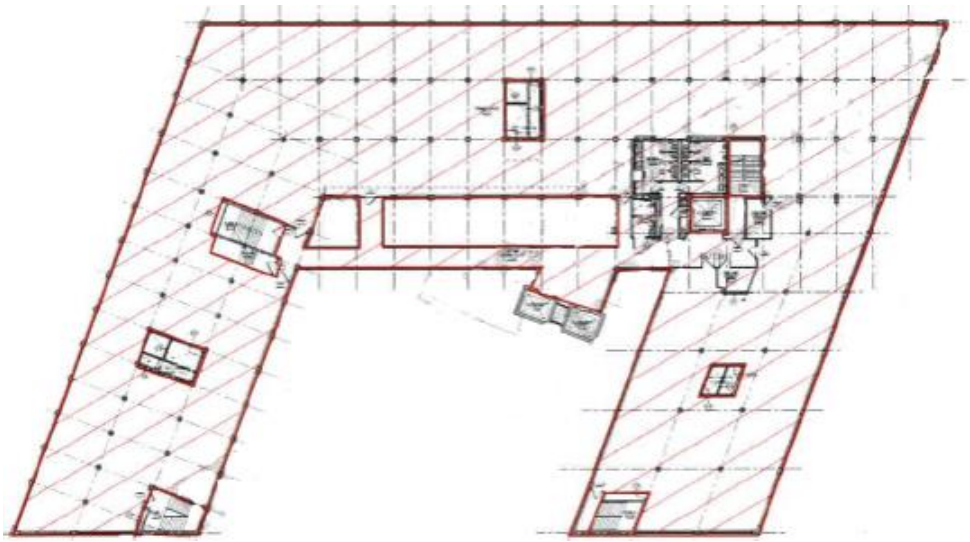
EXHIBIT C-1

Depiction of Premises

Exhibit C-1

First Floor



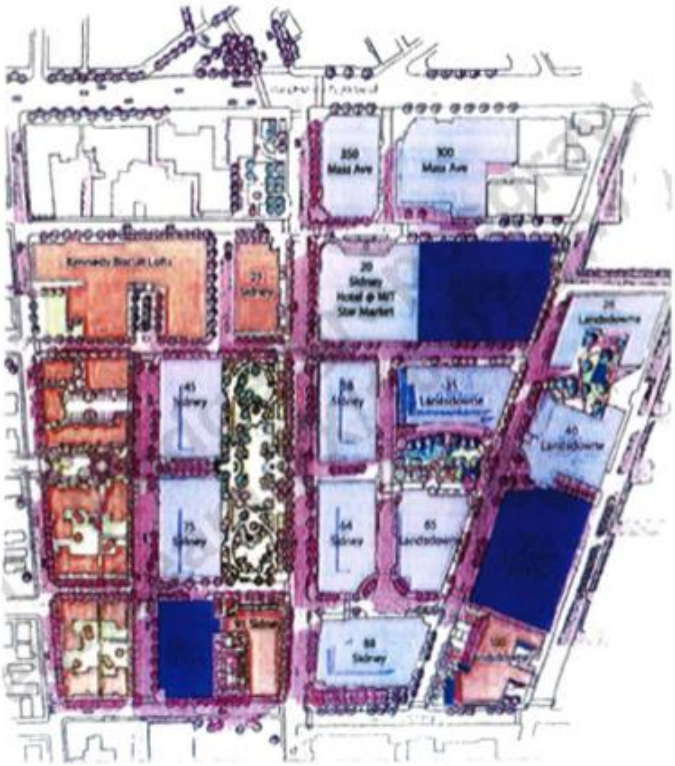


Exh. C-1 - 2

EXHIBIT C-2

Map of the Park

Exhibit C-2



FOREST CITY

EXHIBIT D

26 Landsdowne St Project Work Allocation

Landlord shall at its cost fund and complete the Base Building Work. Tenant Work shall be funded through the Tenant Improvement Allowance, supplemented by Tenant as required. This document describes the allocation of different building elements between Landlord's Base Building Work and Tenant Work.

ELEMENT	DESCRIPTION	BASE BUILDING WORK	TENANT WORK
SITE IMPROVEMENTS	No changes contemplated; Landlord to make any necessary repairs.	X	
BUILDING ENVELOPE	Any modifications to façade, penthouse or screen wall system necessary to accommodate Tenant requirements, provided that any such modifications must be approved by Landlord.		X
ROOFING	New membrane roofing system with walking pads to all base building mechanical equipment	X	
	Repairs, walking pads, etc. required in connection with installation of Tenant mechanical equipment.		X
STRUCTURAL	Any structural upgrades required to ensure building capability to support live load criteria of 100 PSF plus 30 PSF of snow load of roof	X	
	All catwalks and support systems required to support and enable access to Base Building mechanical equipment.	X	
	All structural modifications, support systems, catwalks and other requirements necessary to support and enable access to Tenant equipment.		X
	Any structural upgrades, openings, modifications or other changes to the Base Building requested by or on behalf of Tenant.		X
BASE BUILDING COMMON AREAS	Any modifications to flooring, finishes, lighting, reception desk, etc. in existing lobby/atrium	X	
	Completely new finishes, fixtures, accessories, etc. in core restrooms, on each floor retaining existing layout.	X	
	Any modifications or new finishes to loading dock service areas, electrical service rooms, tel /data room, water & gas service rooms and fire pump room in support of common area activities	X	
	Any modifications or new finishes to loading dock service areas supporting Tenant specific storage, function or service		X

ELEVATORS	Two hydraulic passenger elevators with 3,000 pound capacity and one dedicated service elevator with 5,000 pound capacity (existing to remain as is).	X	
TENANT AREAS	Light gage framing, vapor barrier and interior drywall finish at exterior walls (existing conditions to remain in place).		X
	Fire rated construction and sealing of tenant premises side of demising walls to common area and abutting Tenant Premises		X
	Partitions, ceilings, flooring, painting, other finishes, doors (including suite entry doors), millwork and all related lobby, office and dry-lab build out within Tenant premises		X
WINDOW TREATMENT	Any new window blinds or shades at all windows, subject to Landlord’s prior approval.		X
HVAC	New core/shell HVAC System designed to support a 50/50 mix of laboratory and office uses on floors one through five.	X	
	Central chilled water plant with associated pumps, heat exchangers, cooling towers. The system capacity will be designed to support a 50 / 50 mix of lab and office and will be based on 125 sqft / ton for lab space and 350 sqft / ton for office space	X	
	Central plant high efficiency hot water boiler system for HVAC serving both Tenant areas and base building.	X	
	Once through supply air handling unit with 30% pre filters and 85% final filters, chilled water coils, hot water coils. Units sized for 1.5 cfm per usable sq. ft. of lab space based on a space ratio of 50% Lab / 50% Office	X	
	Core elements of general building exhaust/make up air system	X	
	Office space requirement (approximately 1 cfm. /sf) as it is dictated by occupancy along with 350 sq. ft. per ton of cooling and heating	X	
	Any additional mechanical equipment and/or any modifications to Base Building equipment to increase its capacity.		X
	Hot water and chilled water distribution to base building air handling systems, chillers and cooling towers. Re-heat and chilled water risers are extending vertically through the buildings with valve connections at each floor.	X	
	Vertical supply and general exhaust ductwork, sized to meet initial projected air handling capacity.	X	
	Any modifications to ductwork, VAV boxes, registers, controls etc. associated with upgrades to restrooms.	X	
	Any modifications to ductwork, VAV boxes, registers, controls etc. for atrium lobby and all other core service rooms.	X	

	Supply and exhaust air distribution within the tenant space including all medium pressure and low pressure ducts, diffusers, registers, grilles, terminal volume control boxes, VAV boxes, fan powered units, chilled beams, reheat coils, baseboard radiation and hot water piping.		X
	Toilet and/or shower ventilation requirements for tenant locker rooms and restrooms as required.		X
	Connection to the Campus based Siemens Central DDC computerized energy management system. Installation, operation and monitoring of the base building MEP systems	X	
	Tenant space associated systems and temperature controls within tenant space, and links to base building system.		X
	Tenant metering or sub-metering		X
	Dedicated air handlers and associated ductwork, equipment, exhaust systems and controls, if required for any Tenant laboratory, vivarium, GMP suite or other use that is not accommodated in the Base Building scope of work. Space for tenant equipment to be provided on roof.	X	
	Specialized tenant systems and equipment including supplemental or spot cooling, steam boilers, specialty and fume hood exhaust systems, all related HVAC equipment, and associated duct or piping distribution within the tenant premises or between the equipment location and tenant premises		X
	Compressed air and vacuum systems including centrally located vertical riser with isolation valve for tenant connection at riser. Pro rata share of capacity will be based on sqft and or will be determined at LL's discretion.	X	
HVAC	Additional sound attenuation and modifications to design and construction necessary to ensure tenant's equipment complies with local noise regulations.		X
	Any required modifications to fuel oil storage tank, transfer pumps and distribution piping for base building life safety generator and new Tenant generator to be installed by Landlord	X	
	Fuel oil system for any additional Tenant generators.		X
	Floor by floor humidification and dehumidification systems for tenant needs.		X
GAS	Gas service capable of providing medium-pressure service from Eversource to accommodate both Base Building Equipment and projected Tenant loads (no changes anticipated).	X	
	Gas piping for Base Building equipment.	X	
	Gas piping for tenant equipment.		X

PLUMBING	Building service, with back-flow prevention.	X	
	New restroom fixtures.	X	
	Booster pumps (one to be redundant) to provide 50 psi at the top floor. Valve take offs at each floor	X	
	Waste and vent risers on each floor for tie-ins for domestic use are located in distributed vertical utility chases through each floor plan.	X	
	Installation of Tenant's non-potable/potable boilers and water heaters for laboratory use and for small specialist use such as kitchenettes on Tenant floors.		X
	Distribution of domestic cold water from base building risers.		X
	Production and distribution of hot water in base building restrooms and other common area needs.	X	
	Acid waste and PH neutralizations systems for Tenant Premises Labs		X
	All non-base building plumbing including laboratory, kitchen, cafeteria and specialized equipment.		X
METERING	Air distribution shall be metered by the BAS for all tenants through individual terminal units.		X
	Eversource electric meter for direct metering and billing by utility of Tenant Premises use.		X
	Potable/non-potable, primary/secondary chilled water, and heating and re-heat water within Tenant's Premises can be metered at Tenant's option. Meters shall be provided by tenant to meet pre-specified meter type.		X
	Base building boiler service fuel meter for source emission reporting	X	
ELECTRICAL	Life safety lighting and other "code required" powered systems.	X	
	Current building electrical service (1) 2500 amp (1) 1200 amp switchboard service. Primary service provided by an Eversource 1500 KVA utility transformer located outside. No changes contemplated.	X	
	(2) new 800 amp bus duct risers through electrical rooms on each floor. Allocation does not include power for central MEP equipment will be provided by means of a separate and defined sub-distribution arrangement.	X	
	Bus Duct tap, CT cabinet, electrical utility company metering, and feeder to tenant space		X
	Tenant fit-up of panels, transformers, receptacles & lighting in tenant area.		X

ELECTRICAL	Modifications to lighting, & receptacles serving core areas.	X	
	Exterior lighting package (existing, no changes contemplated).	X	
	80 KW existing life safety emergency generator provides stand-by power for code-required egress lighting, fire alarm systems, and fire pumps located in base building areas.	X	
	Emergency egress and exit lighting in core areas	X	
	Emergency egress and exit lighting fixtures in tenant area, linked to Base Building life safety emergency generator. Tenant to have the ability to tie emergency lighting into Base Building Automatic Transfer switch(s).		X
	200 KW Standby Generator for Tenants, use based on Tenant’s pro-rata share	X	
	Lightning protection system, for building and Base Building equipment.	X	
	Lightning protection system tie-ins for tenant equipment.		X
FIRE PROTECTION	Fire pump and any required new controls, tied to existing fire department connection, flow protection, risers, stairway standpipes, etc.	X	
	Any required modifications to drops, heads, etc. in restrooms.	X	
	All modifications to runouts, drops, heads and related equipment within Tenant Premises and any core areas being upgraded by Tenant.		X
	Special extinguishing systems for Tenant requirements only.		X
	Fire Extinguisher Cabinets and Extinguishers within leased spaces		X
	Fire Extinguisher Cabinets in core area with appropriate Fire Extinguisher.	X	
FIRE ALARM	Base building expandable addressable fire alarm system that meets all code requirements (existing).	X	
	Alteration to fire alarm system to facilitate Tenant program		X
	Detection, annunciation and all wiring in tenant areas and as required tying into base building system. Tenant to have the ability to tie into Base Building system.		X
TELECOM	Any modifications to existing MDF telephone room, core riser closets on each floor with sleeves through slab		X
	Telephone and data wiring, conduits and outlets for Tenant areas from core closets, plus extensions from closets to MDF for carrier services.		X
	Audio-visual connections and systems for Tenant areas.		X
	Any special equipment needed to provide specific requirements for tenants’ telephone equipment.		X

SECURITY	Tenant space security and access control		X
	Exterior and common area security access control system including card readers and peripheral devices	X	
	Modifications to lobby security desk to accommodate CCTV monitors and loading area controls.	X	
SIGNAGE	Building and site exterior address, directional, and any common identity signage to landlord standards.	X	
	Building common area interior signage.	X	
	Signage within tenant’s space and any tenant specific exterior identity signage.		X

EXHIBIT E

Standard Services

The following services will be provided exclusively by the Landlord:

A. Regular maintenance and cleaning of exterior and parking lot landscaping and Building common areas.

B. Regular maintenance, sweeping and snow removal of building exterior areas such as roadways, driveways, sidewalks, parking areas and courtyard paving.

C. Maintenance and repair of base building surveillance and alarm equipment, base building elevators, base building mechanical, electrical and plumbing systems, and base building life safety systems.

D. Building surveillance and alarm system operation and the Landlord's live monitoring service to building standard specifications.

K. Complete interior and exterior cleaning of all windows two times per year.

F. Daily, weekday maintenance and cleaning of hallways, passenger and freight elevators, bathrooms, lobby areas and vestibules.

G. Periodic cleaning of stairwells, freight elevators, and back of house areas.

H. Surveillance personnel.

I. Cold and hot water for lavatory purposes and cold drinking water.

J. Janitorial services within the Premises in accordance with the cleaning specifications attached hereto.

K. Landlord shall cause the Building lobby security station to be staffed during the hours of 7:30 a.m. to 6:00 p.m. Monday through Friday, and shall provide Tenant with permanent security access cards for all of Tenant's employees (and temporary cards for Tenant's contractors, representatives and invitees).

EXHIBIT E-1

WORK LETTER

1. Tenant, at its expense, shall be responsible for the preparation of the architectural plans and the mechanical, electrical and plumbing engineering plans and specifications (the "Tenant Plans") necessary for the construction of Tenant's leasehold improvements and performance of Tenant's responsibilities set forth in the Responsibility Matrix attached as Exhibit D (the "Tenant Work"). The Tenant Plans shall be subject to Landlord's approval, not to be unreasonably withheld, conditioned or delayed, as more fully set forth in Section 4.1 of the Lease. Tenant may use any portion of the Leasehold Improvements Allowance to pay for said Tenant Plans. Tenant may select its own architect and engineers, subject to Landlord's reasonable approval.

2. Subject to Landlord's reasonable approval, Tenant shall have the right, at its expense, to hire and manage a mutually reasonably approved contractor, subcontractors, engineers, architects, and construction manager to perform the Tenant Work. Tenant and Landlord mutually agree that Tenant shall hire The Richmond Group as its contractor and construction manager for the initial build out. All work to be performed in the Premises shall be subject to Landlord approval which shall not be unreasonably withheld, conditioned or delayed and performed in accordance with the tenant construction rules and regulations attached as Exhibit G. There shall be no Landlord coordination, overhead or contractor supervision fees. However, Landlord shall be reimbursed, from the Leasehold Improvements Allowance, for any reasonable third-party, out-of-pocket expenses incurred by Landlord in the review and approval of Tenant's plans, specifications, improvements and construction.

3. Landlord shall provide to Tenant the Leasehold Improvements Allowance (the "LIA"), for application to the costs and expenses, more particularly set forth below, incurred by or on behalf of Tenant. If Tenant incurs costs in excess of the Leasehold Improvements Allowance, as applicable, then all such excess costs shall be borne solely by Tenant. The Tenant must apply to Landlord for reimbursement from the Leasehold Improvements Allowance within one (1) year after the Rent Commencement Date. Any portion of such Leasehold Improvements Allowance for which application for reimbursement has not been made within such one (1) year period shall be cancelled and no longer available.

4. The application of the Leasehold Improvements Allowance by Landlord shall (in addition to payment of the cost of the Tenant Plans and any signage costs incurred by Tenant under Section 12.13 of the Lease) be limited to payment of the following costs and expenses incurred by or on behalf of Tenant in connection with the Improvements: (i) the actual documented and verified cost pursuant to Tenant's design and construction contracts, including without limitation the associated contractor's overhead and profit and general conditions, incurred in the construction of the Improvements to the Premises and architectural, engineering and project management fees, (ii) data/telecom cabling, (iii) modular lab casework, lab benches, hoods and equipment (which shall be the property of the Landlord); and (iv) move-related expenses. The Leasehold Improvements Allowance shall not be used for the making of improvements, installation of fixtures or incorporation of other items (other than signage) which are moveable (rather than permanent improvements in the nature of trade fixtures), examples of which may include furniture, telephone communications and security equipment (as distinct from data/telecom cabling), and bench-top laboratory equipment items such as microscopes.

5. The LIA shall be requested by and disbursed to Tenant in the following manner:

(A) Tenant shall periodically (but not more than once per month) request advances on account of the LIA to reimburse Tenant for payments made or to be used to pay any amounts then due to Tenant's contractor, subcontractor, materialmen or other suppliers of materials and services for and with respect to such portion of the Tenant Work which has then been performed. Landlord shall retain seven and one-half percent (7.5%) of such requested advance ("Retainage"). The Retainage shall be funded pursuant to the provisions of subparagraph (C) below. Tenant acknowledges that Landlord will make disbursements of the L1A to Tenant between the twentieth (20th) and twenty-fifth (25th) of each month ("Disbursement Period") and during no other period during any month. Tenant further acknowledges that in order for Landlord to be able to disburse the portion of the LIA requested by Tenant during a given Disbursement Period, such draw request must be submitted to Landlord with all required supporting information no later than the fifth (5th) of the month during which such Disbursement Period occurs ("Draw Request Submission Deadline" or "DRSD").

(B) Every such request shall be accompanied by a completed AIA Application and Certificate for Payment Form G702 and AIA Continuation Sheet Form G703 from Tenant's contractor to Landlord with partial lien waivers covering partially-completed work (for the first disbursement such lien waivers may be conditional, but for subsequent draws such partial lien waivers shall be unconditional, though partial), together with copies of invoices or receipted bills related to the requested advance. Landlord shall, at its election, make any such advances in an amount equal to Tenant's draw request by check or checks payable to Tenant and checks drawn and delivered to Tenant payable in accordance with the foregoing shall be considered to be advances on account of the LIA made at the time that the check in question is delivered to Tenant. Provided that Tenant submits its draw requests by the DRSD together with the requisite supporting documentation, Landlord agrees to disburse the portion of LIA represented by each request for advance by the Disbursement Period nearest and next following the submission of Tenant's draw request. Tenant further acknowledges, however, that if a draw request is not submitted by the DRSD or within three (3) days thereafter, Landlord shall not be obligated to disburse the requested sum until the Disbursement Period next following the Disbursement Period applicable to the particular DRSD.

(C) Any portion of the LIA not disbursed pursuant to subparagraphs (A) and (B) above shall be disbursed to Tenant at such time as Tenant shall demonstrate, to the reasonable satisfaction of Landlord, that (a) all of the Tenant Work required to be performed is Substantially Complete (as defined below), (b) such work has been paid for in full, the amount paid is not less than such portion of LIA remaining, and that any and all liens therefor or thereon that have been or may be filed have been satisfied and released of record, bonded off or waived; and (c) Tenant has paid all charges then to have been paid by Tenant under applicable provisions of the Lease. For the purposes of this Work Letter and this Lease, "Substantially Complete'' (and correlative terms) shall mean when the Landlord's Work or Tenant Work, as applicable, is fully completed in accordance with the approved plans and specifications, excluding Punch List items.

(D) In the event that there are third-party claims unpaid, work unfinished, or liens filed for such work and labor that have not been bonded or otherwise secured, Landlord may retain from the LIA, a sum sufficient to pay said claims, unfinished work or liens and all costs resulting therefrom and, subject to Tenant's right to dispute such claims, to pay said claims or liens, if necessary. If the amount owed to Tenant by Landlord shall not be sufficient to pay for said claims or liens and the costs resulting therefrom, Tenant shall forthwith pay said claims or liens or cause the same to be properly discharged as herein provided for.

(E) In the event there is unpaid, past due Rent on Tenant's account (which is not the subject of a good faith dispute for which Tenant has provided notice to Landlord), Landlord shall have the option after the expiration of all applicable notice and cure periods, but shall not be obligated, to apply any portion of the LIA against such unpaid Rent.

EXHIBIT F

RULES AND REGULATIONS

DEFINITIONS

Wherever in these Rules and Regulations the word “Tenant” is used, it shall be taken to apply to and include the Tenant and its agents, employees, invitees, licensees, contractors, any subtenants and is to be deemed of such number and gender as the circumstances require. The word “Premises” is to be taken to include the space covered by the Lease. The word “Landlord” shall be taken to include the employees and agents of Landlord. Other capitalized terms used but not defined herein shall have the meanings set forth in the Lease. Any consents or approvals required of Landlord herein shall not be unreasonably withheld, conditioned or delayed.

GENERAL USE OF BUILDING

A. Space for admitting natural light into any public area or tenanted space of the Building shall not be covered or obstructed by Tenant except in a manner reasonably approved by Landlord.

B. Toilets, showers and other like apparatus shall be used only for the purpose for which they were constructed.

C. Intentionally Omitted.

D. No sign, advertisement, notice or the like, shall be used in the Building by Tenant (other than at its office or as permitted in the Lease). If Tenant violates the foregoing, Landlord may remove the violation without liability and may charge all costs and expenses incurred in so doing to Tenant.

E. Tenant shall not throw or permit to be thrown anything out of windows or doors or down passages or elsewhere in the Building, or bring or keep any pets therein, or commit or make any indecent or improper acts or noises. In addition, Tenant shall not do or permit anything which will obstruct, injure, annoy or interfere with other tenants or those having business with them, or affect any insurance rate on the Building or violate any provision of any insurance policy on the Building.

F. Unless expressly permitted by the Landlord in writing:

(1) No additional locks or similar devices shall be attached to any door or window and no keys other than those provided by the Landlord shall be made for any door. If more than two keys for one lock are desired by the Tenant, the Landlord may provide the same upon payment by the Tenant. Upon termination of this lease or of the Tenant’s possession, the Tenant shall surrender all keys to the Premises and shall explain to the Landlord all combination locks on safes, cabinets and vaults.

(2) In order to insure proper use and care of the Premises Tenant shall not install any shades, blinds, or awnings or any interior window treatment without consent of Landlord.

(3) All doors to the Premises are to be kept closed at all times except when in actual use for entrance to or exit from such Premises. The Tenant shall be responsible for the locking of doors and the closing of any transoms and windows in and to the Premises. Any damage or loss resulting from violation of this rule shall be paid for by the Tenant.

(4) The Tenant shall not install or operate any steam or internal combustion engine, boiler, machinery in or about the Premises, or carry on any mechanical business therein. All equipment of any electrical or mechanical nature shall be placed in settings which absorb and prevent any vibration, noise or annoyance.

G. Landlord shall designate reasonable times when and the method whereby freight, small office equipment, furniture, safes and other like articles may be brought into, moved or removed from the Building or Premises, and to designate the location for temporary disposition of such items.

H. The Premises shall not be defaced in any way. No changes in the HVAC, electrical fixtures or other appurtenances of said Premises shall be made without the prior approval of Landlord and in accordance with Landlord's construction rules and regulations.

I. For the general welfare of all tenants and the security of the Building, Landlord may require all persons entering and/or leaving the Building on weekends and holidays and between the hours of 7:30 am to 6:00 pm to register with the Building attendant or custodian by signing his name and writing his destination in the Building, and the time of entry and actual or anticipated departure, or other procedures deemed necessary by Landlord.

J. No animals, birds, pets, and no bicycles or vehicles of any kind shall be brought into or kept in or about said Premises or the lobby or halls of the Building. Tenant shall not cause or permit any unusual or objectionable odors, noises or vibrations to be produced upon or emanate from said Premises.

K. Unless specifically authorized by Landlord, employees or agents of Landlord shall not perform for nor be asked by Tenant to perform work other than their regularly assigned duties.

L. Landlord shall have the right to prohibit any advertising by Tenant which, in Landlord's reasonable opinion tends to impair the reputation of the Building or its desirability as an office building and, upon written notice from Landlord, Tenant shall promptly discontinue such advertising.

M. Canvassing, soliciting and peddling in the Building is prohibited and Tenant shall cooperate to prevent the same from occurring.

N. All parking, Building operation, or construction rules and regulations which may be reasonably established from time to time by Landlord on a uniform basis shall be obeyed.

O. Tenant shall not place a load on any floor of said Premises exceeding applicable floor load limits. Landlord reserves the right to prescribe the weight and position of all safes and heavy equipment.

P. Tenant shall not install or use any air conditioning or heating device or system other than those approved by Landlord.

Q. Landlord shall have the right to make such other and further reasonable rules and regulations as in the judgment of Landlord may from time to time be needful for the safety, appearance, care and cleanliness of the Building and for the preservation of good order therein, and Tenant shall be given reasonable notice of same.

R. The access road and loading areas, parking areas, sidewalks, entrances, lobbies, halls, walkways, elevators, stairways and other common area provided by Landlord shall not be obstructed by Tenant, or used for any purpose other than for ingress and egress.

S. In order to insure proper use and care of the Premises Tenant shall not install any call boxes or communications systems or wiring of any kind without Landlord’s permission and direction.

T. In order to insure proper use and care of the Premises Tenant shall not manufacture any commodity, or prepare or dispense for sale, except through vending machines for the benefit of employees and invitees of Tenant, any foods or beverages, tobacco, flowers, or other commodities or articles without the written consent of Landlord.

U. In order to insure use and care of the Premises Tenant shall not enter any janitors’ closets, mechanical or electrical areas, telephone closets, loading areas, roof or Building storage areas without the prior written consent of Landlord.

V. In order to insure proper use and care of the Premises Tenant shall not place corridors without consent of Landlord.

EXHIBIT G

TENANT CONSTRUCTION RULES AND REGULATIONS

The tenant construction work procedure at University Park is designed to provide efficient scheduling of work while protecting other tenants from unnecessary noise and inconvenience. The attached document explains the procedure and has been prepared in keeping with the standard lease at University Park. It contains detailed information to assist you in planning construction projects. Please review it carefully before design begins.

IN THE EVENT OF ANY INCONSISTENCY BETWEEN THE LEASE (INCLUDING EXHIBIT C) AND THIS EXHIBIT G. THE TERMS OF THE LEASE (INCLUDING EXHIBIT C) SHALL PREVAIL.

SUMMARY

1. Contact the Property Manager as the first step. The Property Manager will be happy to assist you in completing your project efficiently.
2. Incorporate the provisions of the attached document and the “Indoor Air Quality Guidelines for Tenant Improvement Work” into all of your agreements and contracts. You will need written approval from Forest City Commercial Management before contracting any work.
3. In accordance with Exhibit C, provide four sets of drawings and plans to the Property Manager for approval. The Property Manager must also reasonably approve your list of contractors and subcontractors.
4. At least two weeks before construction, submit to the Property Manager detailed schedules; addresses and telephone numbers of supervisors, contractors and subcontractors; copies of permits; proof of current insurance; and notice of any contractor’s involvement in a labor dispute.
5. We will generally require that you conduct noisy, disruptive or odor and dust producing work, as well as the’ delivery of construction materials, outside of regular business hours, provided that Landlord will agree to waive this requirement for so long as the Building is unoccupied by other tenants.
6. We expect all contractors to maintain safe and orderly conditions, labor harmony and proper handling of any hazardous materials. We may stop any work that does not meet the conditions outlined in the attached document.
7. Before occupying the completed space, submit the temporary or final certificate of occupancy and any other approvals to the Property Manager. We also require an air balancing report signed by a professional engineer. Electronic “as-built” drawings in AutoCAD Release 12, DXF format must be delivered to the Property Manager.

Please note that this summary highlights key aspects of the attached document (entitled Rules and Regulations for Design and Construction of Tenant Work) for your convenience and does not supersede it n any way.

1. DEFINITIONS

1.1.	Buildings:	26 Landsdowne Street
1.2.	Property Manager:	Jay Kiely of Forest City Realty Trust, Inc. (617-914-2587), or such other individual as Landlord may designate, from time to time.
1.3.	Building Standards Book:	Building Standards at University Park, as amended by Landlord, from time to time.
1.4.	Consultants:	Any architectural, engineering, or design consultant engaged by a Tenant in connection with Tenant Work.
1.5.	Contractor:	Any Contractor engaged by a Tenant of the Building for the performance of any Tenant Work, and any Subcontractor, employed by any such Contractor.
1.6.	Plans:	All architectural, electrical and mechanical construction drawings and specifications required for the proper construction of the Tenant Work.
1.7.	Regular Business Hours:	Monday through Friday, 7:30 A.M. through 5:31 excluding holidays.
1.8.	Tenant:	Any occupant of t e Building.
1.9.	Tenant Work:	Any alternations, improvements, additions, repairs or installations in the Building performed by or on behalf of any Tenant.
1.10.	Tradesperson:	Any employee (including, without limitation, any mechanic, laborer, or Tradesperson) employed by a Contractor performing Tenant Work.

2. GENERAL

2.1 All Tenant Work shall be performed in accordance with these rules and regulations and the applicable provisions of the Lease.

2.2 The provisions of these rules and regulations shall be incorporated in all agreements governing the performance of all Tenant Work, including, without limitation, any agreements governing services to be rendered by each Contractor and Consultant.

2.3 Except as otherwise provided in these Rules and Regulations, all inquiries, submissions and approvals in connection with any Tenant Work shall be processed through the Property Manager.

3. PLANS

3.1. Review and Approval: Any Tenant wishing to perform Tenant Work must first obtain the Landlord's written approval of its plans for such Tenant Work; provided, however, that Landlord shall not be obligated to approve the plans for the initial Tenant Work if Landlord

reasonably concludes that Tenant is not proportionately spending adequate portions of the Leasehold Improvements Allowance on improvements to both the first and second floor of the Premises. Landlord will allow the Tenant the right to choose its own space planner (s) and architect for the design of Tenant Work.

3.2. Submission Requirements:

Any Tenant performing Tenant Work shall, at the earliest possible time but at least four weeks before any Tenant Work is to begin, furnish to the Property Manager four full sets of plans and specifications describing such Tenant Work.

4. PRECONSTRUCTION NOTIFICATION AND APPROVALS

4.1. Approval to Commence Work

a. Tenant shall submit to Property Manager, for the approval of Property Manager, the names of all prospective Contractors prior to issuing any bid packages to such Contractors, such approval not to be unreasonably withheld, delayed or conditioned, and there shall be no requirement that Tenant use any particular Contractor.

b. No Tenant Work shall be undertaken by any Contractor or Tradesperson unless and until all the matters set forth in Article 4.2 below have been received for the Tenant Work in question and unless Property Manager has approved the matters set forth in Article 4.2 below.

4.2. No Tenant Work shall be performed unless, at least two weeks before any Tenant Work is to begin, all of the following has been provided to the Property Manager and approved. In the event that Tenant proposes to change any of the following, the Property Manager shall be immediately notified of such change and such change shall be subject to the approval of the Property Manager:

a. Schedule for the work, indicating start and completion dates, any phasing and special working hours, and also a list of anticipated shutdowns of building systems.

b. List of all Contractors and Subcontractors, including addresses, telephone numbers, trades employed, and the union affiliation, if any, of each Contractor and Subcontractor.

c. Names and telephone numbers of the supervisors of the work.

d. Copies of all necessary governmental permits, licenses and approvals.

e. Proof of current insurance, to the limits set out in Exhibit A to these Rules and Regulations, naming Landlord as an additional insured party.

f. Notice of the involvement of any Contractor in any ongoing or threatened labor dispute.

g. Payment, Performance and Lien Bonds from sureties acceptable to Landlord, in form acceptable to Landlord, naming Landlord as an additional obligee.

h. Evidence that Tenant has made provision for either written waivers of lien from all Contractors and suppliers of material, or other appropriate protective measures approved by Landlord.

4.3. Reporting Incidents

All accidents, disturbances, labor disputes or threats thereof, and other noteworthy events pertaining to the Building or the Tenant's property shall be reported immediately to the Property Manager. A written report must follow within 24 hours.

5. CONSTRUCTION SCHEDULE

5.1. Coordination

a. All Tenant Work shall be carried out expeditiously and with minimum disturbance and disruption to the operation of the Building and without causing discomfort, inconvenience, or annoyance to any of the other tenants or occupants of the Building or the public at large.

b. All schedules for the performance of construction, including materials deliveries, must be reasonably coordinated through the Property Manager. The Property Manager shall have the right, without incurring any liability to any Tenant, to stop activities and/or to require rescheduling of Tenant Work based upon adverse impact on the tenants or occupants of the Building or on the maintenance or operation of the Building.

c. If any tenant Work requires the shutdown of risers and mains for electrical, mechanical, sprinklers and plumbing work, such work shall be supervised by a representative of Landlord. No Tenant Work will be performed in the Building's mechanical or electrical equipment rooms without both Landlord's prior approval and the supervision of a representative of Landlord, the cost of which shall be reimbursed by the Tenants.

5.2. Time Restrictions

a. Subject to Paragraph 5.1 of these rules and regulations, general construction work will generally be permitted at all times, including during Regular Business Hours.

b. Tenant shall provide the Property Manager with at least twenty-four (24) hours' notice before proceeding with Special Work, as hereinafter defined, and such Special Work will be permitted only at times agreed to by the

Property Manager during periods outside of Regular Business Hours. “Special Work” shall be defined as the following operations:

(1) All utility disruptions, shutoffs and turnovers;

(2) Activities involving high levels of noise, including demolition, coring, drilling and ramsetting;

(3) Activities resulting in excessive dust or odors, including demolition and spray painting.

c. The delivery of construction materials to the Building, their distribution within the Building, and the removal of waste materials shall also be confined to periods outside Regular Business Hours, unless otherwise specifically permitted in writing by the Property Manager.

d. If coordination, labor disputes or other circumstances require, the Property Manager may change the hours during which regular construction work can be scheduled and/or restrict or refuse entry to and exit from the Building by any Contractor.

6. CONTRACTOR PERSONNEL

6.1. Work in Harmony

a. All Contractors shall be responsible for employing skilled and competent personnel and suppliers who shall abide by the rules and regulations herein set forth as amended from time to time by Landlord.

b. No Tenant shall at any time, either directly or indirectly, employ, permit employment, or continue the employment of any Contractor if such employment or continued employment will or does interfere or cause any labor disharmony, coordination difficulty, delay or conflict with any other contractors engaged in construction work in or about the Building or the complex in which the Building is located.

c. Should a work stoppage or other action occur anywhere in or about the Building as a result of the presence, anywhere in the Building, of a Contractor engaged directly or indirectly by a Tenant, or should such Contractor be deemed by Landlord to have violated any applicable rules or regulations, then upon twelve hours written notice, Landlord may, without incurring any liability to Tenant or said Contractor, require any such Contractor to vacate the premises demised by such Tenant and the Building, and to cease all further construction work therein.

6.2. Conduct

a. While in or about the Building, all Tradespersons shall perform in a dignified, quiet, courteous, and professional manner at all times. Tradespersons shall wear clothing suitable for their work and shall remain fully attired at all times. All Contractors will be responsible for their Tradespersons' proper behavior and conduct.

b. The Property Manager reserves the right to remove anyone who, or any Contractor which; is causing a disturbance to any tenant or occupant of the Building or any other person using or servicing the Building; is interfering with the work of others; or is in any other way displaying conduct or performance not compatible with the Landlord's standards.

6.3. Access

a. All Contractors and Tradespersons shall contact the Property Manager prior to commencing work, to confirm work location and Building access, including elevator usage and times of operation. Access to the Building before and after Regular Business Hours or any other hours designated from time to time by the Building Manager and all day on weekends and holidays will only be provided when twenty- four (24) hours advanced notice is given to the Property Manager.

b. No Contractor or Tradesperson will be permitted to enter any private or public space in the Building, other than the common areas of the Building necessary to give direct access to the premises of Tenant for which he has been employed, without the prior approval of the Property Manager.

c. All Contractors and Tradespersons must obtain permission from the Property Manager prior to undertaking work in any space outside of the Tenant's premises. This requirement specifically includes ceiling spaces below the Premises where any work required must be undertaken at the convenience of the affected Tenant and outside of Regular Business Hours. Contractors undertaking such work shall ensure that all work, including work required to reinstate removed items and cleaning, in general be completed prior to opening of the next business day. Property Manager shall use commercially reasonable efforts to assist Tenant in coordinating such work.

d. Contractors shall ensure that all furniture, equipment and accessories in areas potentially affected by any Tenant Work shall be adequately protected by means of drop cloths or other appropriate measures. In addition, all Contractors shall be responsible for maintain security to the extent required by the Property Manager.

e. Temporary access doors for tenant construction areas connecting with a public corridor will be building standards, i.e., door, frame, hardware and lockset. A copy of the key will be furnished to the Property Manager.

6.4. Safety

a. All Contractors shall police ongoing construction operations and activities at all times, keeping the premises orderly, maintaining cleanliness in and about the premises, and ensuring safety and protection of all areas, including truck docks or freight loading area(s), elevators, lobbies and all other public areas which are used for access to the premises.

b. All Contractors shall appoint a supervisor who shall be responsible for all safety measures, as well as for compliance with all applicable governmental laws, ordinances, rules and regulations such as, for example, “OSHA” and “Right-to- Know” legislation.

c. Any damage caused by Tradespersons or other Contractor employees shall be the responsibility of the Tenant employing the Contractor. Costs for repairing such damage shall be charge directly to such Tenant.

6.5. Parking

a. Parking is not allowed in or near truck docks or freight loading area(s), in handicapped or fire access lanes, or any private ways in or surrounding the property. Vehicles so parked will be towed at the expense of the Tenant who has engaged the Contractor for whom the owner of such vehicle is employed.

b. The availability of parking in any parking areas of the Building is limited. Use of such parking for Contractors and their personnel is restricted and must be arranged with and approved by the Property Manager.

7. BUILDING MATERIALS

7.1. Delivery

All deliveries of construction materials shall be made at the predetermined times approved by the Property Manager and shall be effected safely and expeditiously only at the location determined by the Property Manager.

7.2. Transportation in Building

a. Distribution of materials from delivery point to the work area in the Building shall be accomplished with the least disruption to the operation of the Building possible. Elevators will be assigned for material delivery and will be controlled by the Building management.

b. Contractors shall provide adequate protection to all carpets, wall surfaces, doors and trim in all public areas through which materials are transported. Contractors shall continuously clean all such areas. Protective measures shall include runners over carpet, padding in elevators and any other measures determined by the Property Manager.

c. Any damage caused to the Building through the movement of construction materials or otherwise shall be the responsibility of Tenant who has engaged the Contractor involved. Charges for such damage will be submitted by the Landlord directly to the Tenant.

7.3. Storage and Placement

a. All construction materials shall be stored only in the premises where they are to be installed. No storage of materials will be permitted in any public areas, loading docks or corridors leading to the premises.

b. No flammable, toxic, or otherwise hazardous materials may be brought in or about the Building unless: (i) authorized by the Property Manager, (ii) all applicable laws, ordinances, rules and regulations are complied with, and (iii) all necessary permits have been obtained. All necessary precautions shall be taken by the Contractor handling such materials against damage or injury caused by such materials.

c. All materials required for the construction of the premises must comply with Building standards, must conform with the plans and specifications approved by Landlord, and must be installed in the locations shown on the drawings approved by the Landlord.

d. All work shall be subject to reasonable supervision and inspection by Landlord’s Representative.

e. No alterations to approved plans will be made without prior knowledge and approval of the Property Manager. Such changes shall be documented on the as-built drawings required to be delivered to Landlord pursuant to Paragraph 10 of the rules and regulations.

f. All protective devices (e.g., temporary enclosures and partitions) and materials, as well as their placement, must be approved by the Property Manager.

g. It is the responsibility of Contractors to ensure that the temporary placement of materials does not impose a hazard to the Building or its occupants, either through overloading, or interference with Building systems, access, egress or in any other manner whatsoever.

h. All existing and/or new openings made through the floor slab for piping, cabling, etc. must be packed solid with fiberglass insulation to make openings smoke tight. All holes in the floor slab at abandoned floor outlets, etc. will be filled with solid concrete.

7.4. Salvage and Waste Removal

a. All rubbish, waste and debris shall be neatly and cleanly removed from the Building by Contractors daily unless otherwise approved by the Property Manager. The Building's trash compactor shall not be used for construction or other debris. For any demolition and debris, each Contractor must make arrangements with the Property Manager for the scheduling and location of an additional dumpster to be supplied at the cost of the Tenant engaging such Contractor. Where, in the opinion of the Property Manager, such arrangements are not practical, such Contractors will make alternative arrangements for removal at the cost of the Tenant engaging such Contractors.

b. Toxic or flammable waste is to be properly removed daily and disposed of in full accordance with all applicable laws, ordinances, rules and regulations.

c. Contractors shall, prior to removing any item (including, without limitation, building standard doors, frames and hardware, light fixtures, ceiling diffusers, ceiling exhaust fans, sprinkler heads, fire horns, ceiling speakers and smoke detectors) from the Building, notify the Property Manager that it intends to remove such item. At the election of Property Manager, Contractors shall deliver any such items to the Property Manager. Such items will be delivered, without cost, to an area designated by the Property Manager which area shall be within the Building or the complex in which the Building is located.

8. PAYMENT OF CONTRACTORS

Tenant shall promptly pay the cost of all Tenant Work so that Tenant's premises and the Building shall be free of liens for labor or materials. If any mechanic's lien is filed against the Building or any part thereof which is claimed to be attributable to the Tenant, its agents, employees or contractors, Tenant shall give immediate notice of such lien to the Landlord and shall promptly discharge the same by payment or filing any necessary bond within 10 days after Tenant has first notice of such mechanic's lien.

9. CONTRACTORS INSURANCE

Prior to commencing any Tenant Work, and throughout the performance of the Tenant Work, each Contractor shall obtain and maintain insurance in accordance with Exhibit A attached hereto. Each Contractor shall, prior to making entry into the Building provide Landlord with certificates that such insurance is in full force and effect.

10. SUBMISSIONS UPON COMPLETION

a. Upon completion of any Tenant Work, Tenant shall submit to Landlord a permanent certificate of occupancy and final approval of any other governmental agencies having jurisdiction.

b. A properly executed air balancing report, signed by a professional engineer, shall be submitted to Landlord upon completion of all mechanical work. Such report shall be subject to Landlord's approval.

c. Tenant shall submit to Landlord's Representative a final "as-built" set of electronic "as-built" drawings in AutoCAD Release 12, DXF format.

11. ADJUSTMENT OF REGULATIONS

These Rules and Regulations may be amended from time to time in accordance with the reasonable judgment of Landlord.

12. CONFLICT BETWEEN RULES AND REGULATIONS AND LEASE

In the event of any conflict between the Lease and these rules and of the Lease shall control.

EXHIBIT A

TO

CONSTRUCTION RULES AND REGULATIONS

INSURANCE REQUIREMENTS FOR CONTRACTORS

When Tenant Work is to be done by Contractors in the Building, the Tenant authorizing such work shall be responsible for including tin the contract for such work the following insurance and indemnity requirements to the extent that they are applicable. Insurance certificates must be received prior to construction. Landlord shall be named as an additional insured party on all certificates.

INSURANCE

Each Contractor and each Subcontractor shall, until the completion of the Tenant Work in question, procure and maintain at its expense, the following insurance coverages with companies acceptable to Landlord in the following minimum limits:

Workers' Compensation

(including coverage for Occupational Dis

	Limit of Liability
Workers' Compensation	Statutory Benefits
Employer's Liability	$ 500,000

Comprehensive General Liability

(including Broad Form Comprehensive Liability Enhancement, Contractual Liability assumed by the Contractor and the Tenant under Article 15.3 of the Lease and Completed Operations coverage)

	Limit of Liability
Bodily Injury & Property Damage	$ 5,000,000 combined single limit

Comprehensive Automobile Liability

(including coverage for Hired and Non-owned Automobiles)

	Limit of Liability
Bodily Injury & Property Damage	$1,000,000 per occurrence

SUPPLEMENT TO RULES AND REGULATIONS FOR DESIGN CONSTRUCTION OF TENANT WORK

FACT SHEET FOR UNIVERSITY PARK

1. PROPERTY MANAGER'S OFFICE

CONTACT(S):	Jay Kiely, Property Manager Robyn Arruda, Asst. Property Manager Eddie Arruda, Chief Engineer
LOCATION:	Forest City Management 38 Sidney Street Cambridge, MA 02139
TELEPHONE NUMBER:	[****]

2. PERSONNEL, MATERIAL AND EQUIPMENT ACCESS

LOCATION OF LOADING DOCK:	
NORMAL HOURS OF ACCESS:	7:30 A.M. to 5:30 P.M.
ENTRANCES NOT AVAILABLE	All building lobbies.

3. USE OF ELEVATORS

LOCATION OF ELEVATORS:	Specific locations of service elevators will be pointed out by the building staff.
NORMAL HOURS OF OPERATION:	7:30 A.M. TO 5:30 P.M.
OVERTIME OPERATION CHARGES:	$40.00 per hour
ELEVATORS NOT AVAILABLE:	All passenger elevators.

4. SPECIAL CONDITIONS AND PRECAUTIONS

As University Park consists of multi-use buildings incorporating offices, retail and hotel suites, special care must be taken to control noise at all times.

All window blinds are to be removed prior to construction and replaced without damage immediately after completion of construction by the tenant and/or his contractor.

EXHIBIT H

Form of MIT Non-Disturbance Agreement

Agreement dated as of . 2018, by and between MASSACHUSETTS INSTITUTE OF TECHNOLOGY, a Massachusetts educational corporation chartered by Massachusetts law (the "Ground Lessor"), UP 26 LANDSDOWNE, LLC, a Delaware limited liability company ("Landlord") and BEAM THERAPEUTICS, INC., a Delaware corporation ("Tenant").

BACKGROUND

Ground Lessor and Landlord are parties, as landlord and tenant respectively, to a Construction and Lease Agreement ("Ground Lease") dated August 20, 1986 , for certain real property located at 26 Landsdowne Street in Cambridge, Massachusetts, as more particularly described on Exhibit A attached hereto ("Land"). A Notice of Lease pertaining to the Ground Lease has been recorded at the Middlesex South District Registry of Deeds and filed for registration in the Middlesex South Registry District of the Land Court. Tenant has entered into a lease dated as of 2018 ("Lease") with Landlord for the Building ("Premises"), the Premises being more particularly described in the Lease.

AGREEMENTS

1. Non-Disturbance. If the Ground Lease is terminated, for any reason, Ground Lessor shall not disturb Tenant in Tenant's possession of the Premises and, without any hindrance or interference from the Ground Lessor, shall permit Tenant peaceably to hold and enjoy the Premises for the remainder of the unexpired term of the Lease, together with any extension periods provided for therein, upon and subject to the same terms, covenants and conditions as are contained in the Lease, and shall recognize the Lease as modified hereby. The foregoing is on the condition that Tenant is not in default under the Lease beyond any applicable notice and grace periods contained in the Lease.

2. Attornment. Tenant hereby agrees that if the Ground Lease is terminated for any reason, Tenant shall attorn to Ground Lessor and shall be liable to and recognize Ground Lessor as Landlord under the Lease for the balance of the term of the Lease upon and subject to all of the terms and conditions thereof. In such case, upon receipt of notice from Ground Lessor setting forth the effective date of the termination of the Ground Lease, Tenant shall pay to the Ground Lessor all obligations required to be paid and performed by Tenant under the Lease arising after the date of termination. The Lease shall continue in full force and effect as a direct lease between Ground Lessor and Tenant.

3. Additional Conditions. Tenant agrees that Ground Lessor shall not be: (i) liable for any act or omission of any person or party who may be landlord under the Lease prior to any termination of the Ground Lease ("Prior Landlord"); (ii) subject to any offsets or defenses which Tenant might have against Prior Landlord; (iii) bound by any prepayment of rent or additional rent, or any other charge which Tenant might have paid to Prior Landlord for more than the then current month (other than a bona fide security deposit paid by Tenant to Landlord under the Lease or other rent, additional rent or charge which has been received by Ground Lessor); and

(iv) bound by any amendment, modification or termination of the Lease made without Ground Lessor's express agreement when such agreement is required under the Ground Lease. Tenant additionally agrees with Ground Lessor that Tenant shall not enter into any assignment of the Lease or sublease of all or any part of the Premises in cases where Landlord's consent is required thereto, unless Ground Lessor shall have also given its consent thereto, which consent shall not be unreasonably, withheld, conditioned or delayed. Nothing herein, however, shall constitute a waiver of Tenant's rights as against such individual or entity which is the landlord under the Lease as of the time of any event or circumstances which may give rise to a claim of the Tenant against such individual or entity. In addition, nothing herein shall relieve any successor landlord under the Lease from its obligation to comply with those obligations of a Landlord under the Lease during the period for which it is the owner of the Landlord's interest in the Lease.

4. Landlord's Defaults. Tenant hereby agrees that, if Tenant provides Landlord with any notice of default or claimed default on the part of Landlord under the Lease, Tenant shall concurrently therewith send a copy of such notice to Ground Lessor. In such event, Ground Lessor shall be permitted (but not obligated) to cure any such default within the period of time allotted thereto in the Lease. If Landlord shall fail to cure such default within the period of time allocated thereto in the Lease (or, if Landlord shall not within such time period have commenced diligent efforts to remedy a default that cannot be fully cured within such time period) then Tenant shall provide Ground Lessor with notice of such failure. Upon receipt of such notice of Landlord's failure to cure, Ground Lessor shall be granted an additional thirty (30) days during which it shall be permitted (but not obligated) to cure such default. In the case of a default, which cannot with diligence be remedied by Ground Lessor within thirty (30) days, Ground Lessor shall have such additional period of time as may be reasonably necessary in order for Ground Lessor to remedy such default with diligence and continuity of effort, provided that Ground Lessor has commenced to cure such default within such thirty (30) day period and completes such cure within an additional thirty (30) days thereafter, subject to delays that are not within the reasonable control of Ground Lessor.

5. Notices. Duplicates of all notices delivered by any party to another party and required by this Agreement shall be delivered concurrently to all other parties to this Agreement. All notices shall be written, delivered by certified or registered mail, and sent, if to Ground Lessor, to 238 Main Street, Suite 200, Cambridge, Massachusetts 02142, Attention: Director of Real Estate, if to Tenant to the notice addresses provided for Tenant in the Lease, and if to Landlord to 38 Sidney Street, Cambridge, MA 02139-4234, Attention: President, or such addresses as may, from time to time, be set forth in notices to the other parties hereunder.

6. Exculpation of Ground Lessor. Ground Lessor shall not be personally liable hereunder. Tenant agrees to look to Ground Lessor's interest in the Land and Building only for satisfaction of any claim against Ground Lessor hereunder.

7. Successors and Assigns. This Agreement shall bind Tenant, its successors and assigns, and shall benefit Tenant and only such successor and assigns of Tenant as are permitted by the Lease and shall bind and benefit Ground Lessor and its successors and assigns (provided that after transfer of Ground Lessor's entire interest in the Land to another party, Ground Lessor shall have no liability for any act or omission of such party) and shall bind and benefit Landlord and its successors and assigns.

EXECUTED as an instrument under seal as of the date set forth above. MASSACHUSETTS INSTITUTE OF TECHNOLOGY Ground Lessor

By: _____
Name:
Title:

BEAM THERAPEUTICS, INC., a Delaware corporation
Tenant

By: _____

Landlord
UP 26 LANDSDOWNE, LLC a Delaware limited liability company

By: FC HCN University Park, LLC, a Delaware limited liability company Its Sole Member

By: Forest City University Park, LLC, a Delaware limited liability company Its Managing Member

By: _____
Name: _____

COMMONWEALTH OF MASSACHUSETTS)
) ss:
COUNTY OF MIDDLESEX)

BEFORE ME, a Notary Public in and for said County and State, personally appeared the MASSACHUSETTS INSTITUTE OF TECHNOLOGY, by _____, its Director of Real Estate and Associate Treasurer, who acknowledged that he did sign the foregoing instrument and that the same is his free act and deed and the free act and deed of said corporation.

IN TESTIMONY WHEREOF, I set my hand and official seal at _____, this __ day of ____, 2018.

Notary Public:_____
My Commission Expires:_____

COMMONWEALTH OF MASSACHUSETTS)
) ss:
COUNTY OF MIDDLESEX)

BEFORE ME, a Notary Public in and for said County and State, personally appeared the above-named BEAM THERAPEUTICS, INC., by _____ who acknowledged that he/she did sign the foregoing instrument and that the same is his/her free act and deed and the free act and deed of said corporation.

IN TESTIMONY WHEREOF', I set my hand and official seal at _____, this __ day of _____.

Notary Public:_____
My Commission Expires:_____

COMMONWEALTH OF MASSACHUSETTS)
) ss:
COUNTY OF MIDDLESEX)

BEFORE ME, a Notary Public in and for said County and State, personally appeared the above-named UP 26 LANDSDOWNE, LLC, by _____ who acknowledged that he/she did sign the foregoing instrument and that the same is his/her free act and deed and the free act and deed of said limited liability company.

IN TESTIMONY WHEREOF, I set my hand and official seal at _____, this __ day of _____.

EXHIBIT I

FORM OF SNDA OF CURRENT MORTGAGEE

SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AGREEMENT

Tenant Name:_____
Trade Name:_____
Room/Unit No.:_____

THIS AGREEMENT is dated the day of _____ 20__, and is made by and among CONNECTICUT GENERAL LIFE INSURANCE COMPANY, having an address c/o CIGNA Investments, Inc., Wilde Building, 900 Cottage Grove Road, Hartford, Connecticut 06152, Attn: Debt Asset Management, A4-CRI ("Mortgagee"), _____, d/b/a _____, having an address of _____ ("Tenant"), and _____, having an address of _____ ("Landlord").

RECITALS:

A. Tenant has entered into a lease ("Lease") dated _____ with _____ as lessor ("Landlord"), covering the premises known as _____ (the "Premises") within the property known as _____, more particularly described as shown on Exhibit A. attached hereto (the "Real Property").

B. Mortgagee has agreed to make or has made a mortgage loan in the amount of _____ to Landlord, secured by a mortgage of the Real Property (the "Mortgage"), and the parties desire to set forth their agreement herein.

NOW, THEREFORE, in consideration of the premises and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

1. The Lease and all extensions, renewals, replacements or modifications thereof are and shall be subject and subordinate to the Mortgage and all terms and conditions thereof insofar as it affects the Real Property of which the Premises form a part, and to all renewals, modifications, consolidations, replacements and extensions thereof, to the full extent of amounts secured thereby and interest thereon.

2. Tenant shall attorn to and recognize any purchaser at a foreclosure sale under the Mortgage, any transferee who acquires the Premises by deed in lieu of foreclosure, and the successors and assigns of such purchaser(s), as its landlord for the unexpired balance (and any extensions, if exercised) of the term of the Lease on the same terms and conditions set forth in the Lease.

3. If it becomes necessary to foreclose the Mortgage, Mortgagee shall neither terminate the Lease nor join Tenant in summary or foreclosure proceedings for the purpose of terminating the Lease so long as Tenant is not in default under any of the terms, covenants, or conditions of the Lease beyond any applicable notice and cure periods.

4. If Mortgagee succeeds to the interest of Landlord under the Lease, Mortgagee shall not be: (a) liable for the return of any security deposit unless such deposit has been delivered to Mortgagee by Landlord or is in an escrow fund available to Mortgagee, (b) bound by any rent or additional rent that Tenant might have paid for more than the current month to any prior landlord (including Landlord), (c) bound by any amendment, modification, or termination of the Lease made without Mortgagee's prior written consent (which consent shall not be unreasonably withheld, conditioned or delayed), or (d) personally liable under the Lease, Mortgagee's liability thereunder being limited to its interest in the Real Property.

5. This Agreement shall be binding on and shall inure to the benefit of the parties hereto and their successors and assigns.

6. Tenant shall give Mortgagee, by commercial overnight delivery service, a copy of any notice of default served on Landlord at the same time such notice is sent to the Landlord, addressed to Mortgagee at Mortgagee's address set forth above or at such other address as to which Tenant has been notified in writing. Mortgagee shall have the right, but not the obligation, to cure such default within the time period specified in the Lease.

7. Landlord has agreed under the Mortgage and other loan documents that rentals payable under the Lease shall be paid directly by Tenant to Mortgagee upon default by Landlord under the Mortgage. After receipt of notice from Mortgagee to Tenant, at the address set forth above or at such other address as to which Mortgagee has been notified in writing, that rentals under the Lease should be paid to Mortgagee, Tenant shall pay to Mortgagee, or at the direction of Mortgagee, all monies due or to become due to Landlord under the Lease. Tenant shall have no responsibility to ascertain whether such demand by Mortgagee is permitted under the Mortgage, or to inquire into the existence of a default. Landlord hereby waives any right, claim, or demand it may now or hereafter have against Tenant by reason of such payment to Mortgagee, and any such payment shall discharge the obligations of Tenant to make such payment to Landlord.

IN WITNESS WHEREOF, the parties hereto have executed these presents as of the day and year first above written.

WITNESSES:

_____
Name:

_____
Name:

_____
Name:

_____
Name:

_____
Name:

_____
Name:

MORTGAGEE:

CONNECTICUT GENERAL LIFE INSURANCE COMPANY

By: CIGNA Investments, Inc., its authorized representative

By: _____

Its: _____

TENANT:

_____

By: _____

Its: _____

LANDLORD:

_____

By: _____

Its: _____

STATE OF CONNECTICUT

ss. Bloomfield

COUNTY OF HARTFORD

On this, the __ day of _____, 20__, before me, the undersigned officer, personally appeared _____, who acknowledged himself to be the _____ of CIGNA Investments, Inc., authorized representative for Connecticut General Life Insurance Company, and signed the foregoing instrument for the purposes therein contained as his free act and deed and the free act and deed of such entity.

IN WITNESS WHEREOF, I hereunto set my hand and official seal the day and year aforesaid.

_____
Notary Public
My Commission Expires:

STATE OF _____

ss. _____

COUNTY OF _____

On this, the __ day of _____, 20__, before me, the undersigned officer, personally appeared _____, who acknowledged herself/himself to be the _____ of _____, and signed the foregoing instrument for the purposes therein contained as his free act and deed and the free act and deed of such entity.

IN WITNESS WHEREOF, I hereunto set my hand and official seal the day and year aforesaid.

_____
Notary Public
My Commission Expires:

STATE OF _____

ss. _____

COUNTY OF _____

On this, the __ day of _____, 20__, before me, the undersigned officer, personally appeared _____, who acknowledged herself/himself to be the _____ of _____, and signed the foregoing instrument for the purposes therein contained as his free act and deed and the free act and deed of such entity.

IN WITNESS WHEREOF, I hereunto set my hand and official seal the day and year aforesaid.

_____
Notary Public
My Commission Expires:

Exhibit 10.2

238 MAIN STREET
CAMBRIDGE, MASSACHUSETTS

LEASE SUMMARY SHEET

Execution Date:	April 24, 2019
Tenant:	Beam Therapeutics, Inc., a Delaware corporation
Tenant's Mailing Address Prior to Occupancy:	26 Landsdowne Street, 2nd Floor Cambridge, MA 02139
Landlord:	Massachusetts Institute of Technology, a Massachusetts charitable corporation
Building:	238 Main Street, Cambridge, Massachusetts. The Building consists of an existing office building containing approximately 99,082 rentable square feet (the "**Office Building**") and the laboratory addition to be constructed by Landlord and which will contain approximately 325,348 rentable square feet (the "**Laboratory Addition**"). The land on which the Office Building is located and on which the Laboratory Addition will be constructed (the "**Land**") is more particularly described in Exhibit I attached hereto and made a part hereof (the Land, together with the Building, are hereinafter collectively referred to as the "**Property**").
Premises:	Approximately 123,209 rentable square feet of space consisting of all rentable areas on the seventh (7th) floor of the Laboratory Addition (containing approximately 30,655 rentable square feet), all rentable areas on the eighth (8th) floor of the Laboratory Addition (containing approximately 30,655 rentable square feet), all rentable areas on the ninth (9th) floor of the Laboratory Addition (containing approximately 30,655 rentable square feet), all rentable areas on the tenth (10th) floor of the Laboratory Addition (containing approximately 30,655 rentable square feet), including associated mechanical, ground floor and lower level space and 589 rentable square feet, being half of the rentable square footage attributable to the ACF Elevator (hereinafter defined), all as more particularly shown as hatched, highlighted or outlined on the plans attached hereto as Exhibit 2A and made a part hereof (the "**Lease Plan**"). "**Phase 1**" of the Premises shall consist of all

	rentable areas on the seventh (7th), ninth (9th) and tenth (10th) floors of the Building. "**Phase 2**" of the Premises shall be all rentable areas on the eighth (8th) floor of the Building. Phase 1 and Phase 2 are each referred to herein as a "**Phase.**"
Term Commencement Dates:	With respect to Phase 1: The date on which Phase 1 is delivered to Tenant in the condition required by Section 3.1 of this Lease. With respect to Phase 2: The date on which Phase 2 is delivered to Tenant in the condition required by Section 3.1 of this Lease.
Rent Commencement Dates:	Subject to acceleration on a day for day basis for each day of Tenant Delays (hereinafter defined), the Rent Commencement Date (a) with respect to Phase 1 shall occur on the Phase 1 Term Commencement Date, and (b) with respect to Phase 2 shall occur on the date which is four (4) months after the Phase 2 Term Commencement Date.
Expiration Date:	The last day of the month in which the twelfth (12th) anniversary of the Phase 2 Rent Commencement Date occurs; provided, however, if the Phase 2 Rent Commencement Date occurs on the first day of a calendar month, then the Expiration Date shall occur on the day immediately preceding the twelfth (12th) anniversary of the Phase 2 Rent Commencement Date.
Extension Terms:	Subject to Section 1.2 below, two (2) extension term(s) of five (5) years each.
Parking Passes:	Subject to Section 1.4(c) below. 0.8 parking passes for each 1.000 rentable square feet of the Premises.
Landlord's Contribution:	Subject to the terms of the Work Letter attached hereto as Exhibit 5, Twenty-Three Million Four Hundred Nine Thousand Seven Hundred Ten Dollars ($23,409,710).
Permitted Uses:	Subject to Legal Requirements (hereinafter defined), general office, research, development and laboratory use, including vivarium (located on a single floor and not to exceed 10,000 rsf), and other ancillary uses related to the foregoing (all in proportions consistent with the design of the base Building). The Permitted Uses shall not include manufacturing of biotechnology or pharmaceutical products.

Base Rent:

With respect to Phase 1:	RENT YEAR[1]	ANNUAL BASE RENT	MONTHLY PAYMENT
	1	$ 8,874,622.50	$ 739,551.88
	2	$ 9,140,861.18	$ 761,738.43
	3	$ 9,415,087.01	$ 784,590.58
	4	$ 9,697,539.62	$ 808,128.30
	5	$ 9,988,465.81	$ 832,372.15
	6	$10,288,119.78	$ 857,343.32
	7	$10,596,763.38	$ 883,063.61
	8	$10,914,666.28	$ 909,555.52
	9	$11,242,106.27	$ 936,842.19
	10	$11,579,369.45	$ 964,947.45
	11	$11,926,750.54	$ 993,895.88
	12	$12,284,553.05	$1,023,712.75
	13	$12,653,089.65	$1,054,424.14

With respect to Phase 2:	PERIOD OF TIME	ANNUAL BASE RENT	MONTHLY PAYMENT
	Phase 2 RCD - End of Rent Year 1	$ 3,015,046.00[2]	$ 251,253.83
	Rent Year 2	$ 3,105,497.38	$ 258,791.45
	Rent Year 3	$ 3,198,662.30	$ 266,555.19
	Rent Year 4	$ 3,294,622.17	$ 274,551.85
	Rent Year 5	$ 3,393,460.84	$ 282,788.40
	Rent Year 6	$ 3,495,264.66	$ 291,272.06
	Rent Year 7	$ 3,600,122.60	$ 300,010.22
	Rent Year 8	$ 3,708,126.28	$ 309,010.52
	Rent Year 9	$ 3,819,370.07	$ 318,280.84
	Rent Year 10	$ 3,933,951.17	$ 327,829.26
	Rent Year 11	$ 4,051,969.70	$ 337,664.14
	Rent Year 12	$ 4,173,528.79	$ 347,794.07
	Rent Year 13	$ 4,298,734.66[2]	$ 358,227.89

1 For the purposes of this Lease, the first "**Rent Year**" shall be defined as the period commencing as of the Rent Commencement Date and ending on the last day of the month in which the first (1st) anniversary of the Rent Commencement Date occurs; provided, however, if the Rent Commencement Date occurs on the first day of a calendar month, then the first Rent Year shall end on the day immediately preceding the first (1st) anniversary of the Rent Commencement Date. Thereafter, "**Rent Year**" shall be defined as any subsequent twelve (12) month period during the term of this Lease; provided, however, the 13th Rent Year shall end no later than the Expiration Date.

2 Annualized.

Operating Costs and Taxes:	See Sections 5.2 and 5.3
Tenant's Share:	A fraction, the numerator of which is the number of rentable square feet in the Premises and the denominator of which is the number of rentable square feet in the Laboratory Addition.
Tenant's Tax Share:	A fraction, the numerator of which is the number of rentable square feet in the Premises and the denominator of which is the number of rentable square feet in the buildings on the Tax Lot (hereinafter defined) recognized by the City of Cambridge as being used for purposes which are not exempt from real estate taxation as of the date on which the assessment is made for the tax year in question.
Letter of Credit:	Subject to Section 7.1. Eleven Million Eight Hundred Thirty-Two Thousand Eight Hundred Thirty Dollars ($11,832,830.00).

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THIS INDENTURE OF LEASE (this "**Lease**") is hereby made and entered into on the Execution Date by and between Landlord and Tenant.

As contemplated by (and as further detailed in) other provisions of this Lease, Landlord and Tenant are entering into this Lease for space in the Laboratory Addition, which is an addition to the Office Building, which is an existing building. The Laboratory Addition, together with an atrium connection between the Laboratory Addition and the Office Building (the "**Atrium**"), is to be constructed by Landlord, and will be collectively known as 238 Main Street, Cambridge, Massachusetts.

1. LEASE GRANT; TERM; APPURTENANT RIGHTS; EXCLUSIONS

1.1. Lease Grant. Landlord hereby leases to Tenant, and Tenant hereby leases from Landlord, the Premises upon and subject to the terms and conditions of this Lease, for a term of years commencing on the Term Commencement Date and, unless earlier terminated or extended pursuant to the terms hereof, ending on the Expiration Date (the "**Initial Term**"; the Initial Term and any Extension Terms, if duly exercised, are hereinafter collectively referred to as the "**Term**"). Once the Phase 1 Term Commencement Date and the applicable Rent Commencement Dates are determined, Landlord and Tenant shall execute an agreement confirming the Phase 1 Term Commencement Date, the Phase 2 Term Commencement Date, the Phase 1 Rent Commencement Date, the Phase 2 Rent Commencement Date and the Expiration Date in substantially the form attached hereto as Exhibit 3. Tenant's failure to execute and return any such agreement proposed by Landlord, or to provide written objection to the statements contained therein, within ten (10) business days after the date of Tenant's receipt thereof, shall be deemed an approval by Tenant of Landlord's determination of such dates as set forth therein.

1.2. Extension Terms.

(a) Provided that the following conditions (the "**Extension Conditions**"), any or all of which may be waived by Landlord in its sole discretion, are satisfied (i) Tenant is not then subleasing (other than to Affiliates) more than thirty percent (30%) of the Premises; and (ii) there is no Monetary Default (hereinafter defined) nor any Event of Default as of the date of the Extension Notice (hereinafter defined), Tenant shall have the option to extend the Initial Term for two (2) additional terms of five (5) years each (each, an "**Extension Term**"), commencing as of the expiration of the Initial Term, or the prior Extension Term, as the case may be. Tenant must exercise such option to extend, if at all, by giving Landlord written notice (the "**Extension Notice**") no earlier than twenty-four (24) months and no later than twenty-one (21) months prior to the expiration of the Initial Term or the prior Extension Term, as the case may be, *time being of the essence*. Notwithstanding the foregoing, Landlord may nullify Tenant's exercise of its option to extend the Term by written notice to Tenant (the "**Nullification Notice**") if (A) on the date Landlord receives the applicable Extension Notice, there is an event which, with the passage of time and/or the giving of notice, would constitute an Event of Default hereunder and (B) Tenant fails to cure such default within the applicable cure period set forth in Section 20.1 after receipt of the Nullification Notice. Upon the satisfaction of the Extension Conditions and the timely giving of the Extension Notice without a subsequent nullification by Landlord, the Term shall be deemed extended for the applicable Extension Term upon all of the terms and conditions of this Lease, except that Base Rent during each Extension Term shall be

calculated in accordance with this Section 1.2. Landlord shall have no obligation to construct or renovate the Premises and Tenant shall have one (1) fewer option to extend the Initial Term. If Tenant fails to give a timely Extension Notice, as aforesaid, Tenant shall have no further right to extend the Initial Term. Notwithstanding the fact that Tenant's proper and timely exercise of such option to extend the Initial Term shall be self executing, the parties shall promptly execute a lease amendment reflecting such Extension Term after Tenant validly exercises its option. The execution of such lease amendment shall not be deemed to waive any of the conditions to Tenant's exercise of its rights under this Section 1.2.

(b) The Base Rent during each Extension Term (the "**Extension Term Base Rent**") shall be determined in accordance with the process described hereafter. Extension Term Base Rent shall be the greater of (i) Base Rent for the last Rent Year of the prior term, increased by three percent (3%) on the first day of such Extension Term, or (ii) the fair market rental value of the Premises then demised to Tenant as of the commencement of the applicable Extension Term as determined in accordance with the process described below, for renewals of combination laboratory and office space in the Kendall Square area of equivalent quality, size, utility and location, with the length of the Extension Term, the credit standing of Tenant and all other relevant factors to be taken into account. Within thirty (30) days after receipt of the Extension Notice, Landlord shall deliver to Tenant written notice of its determination of the Extension Term Base Rent for the applicable Extension Term. Tenant shall, within thirty (30) days after receipt of such notice, notify Landlord in writing whether Tenant accepts or rejects Landlord's determination of the Extension Term Base Rent ("**Tenant's Response Notice**"). If Tenant fails timely to deliver Tenant's Response Notice, Landlord's determination of the Extension Term Base Rent shall be binding on Tenant.

(c) If and only if Tenant's Response Notice is timely delivered to Landlord and indicates both that Tenant rejects Landlord's determination of the Extension Term Base Rent and desires to submit the matter to the determination process described in this Section 1.2(c) (the "**Determination Process**"), then the Extension Term Base Rent shall be determined in accordance with the procedure set forth in this Section 1.2(c). In such event, within ten (10) days after receipt by Landlord of Tenant's Response Notice indicating Tenant's desire to submit the determination of the Extension Term Base Rent to the Determination Process, Tenant and Landlord shall each notify the other, in writing, of their respective selections of an appraiser (respectively, "**Landlord's Appraiser**" and "**Tenant's Appraiser**"). If Landlord's Appraiser and Tenant's Appraiser are unable to agree within thirty (30) days on the Extension Term Base Rent, Landlord's Appraiser and Tenant's Appraiser shall then jointly select a third appraiser (the "**Third Appraiser**") within ten (10) days after the end of such 30-day period. All of the appraisers selected shall be individuals with at least ten (10) consecutive years' commercial appraisal experience in the area in which the Premises are located, shall be members of the Appraisal Institute (M.A.I.), and, in the case of the Third Appraiser, shall not have acted in any capacity for either Landlord or Tenant within five (5) years of his or her selection. The three appraisers shall determine the Extension Term Base Rent in accordance with the requirements and criteria set forth in Section 1.2(b) above, employing the method commonly known as Baseball Arbitration, whereby Landlord's Appraiser and Tenant's Appraiser each sets forth its determination of the Extension Term Base Rent as defined above, and the Third Appraiser must select one or the other (it being understood that the Third Appraiser shall be expressly prohibited from selecting a compromise figure). Landlord's Appraiser and Tenant's Appraiser shall deliver

their determinations of the Extension Term Base Rent to the Third Appraiser within five (5) days of the appointment of the Third Appraiser and the Third Appraiser shall render his or her decision within ten (10) days after receipt of both of the other two determinations of the Extension Term Base Rent. The Third Appraiser's decision shall be binding on both Landlord and Tenant. Each party shall bear the cost of its ow n appraiser, and the cost of the Third Appraiser shall be paid by the party w hose determination is not selected.

(d) Commencing on the first (1st) anniversary of the first day of the applicable Extension Term, Base Rent shall increase annually by three percent (3%).

1.3. Notice of Lease. Neither party shall record this Lease, but, after the Term Commencement Date, each of the parties hereto agrees to join in the execution of a statutory notice of lease in substantially the form attached hereto as Exhibit 4, which notice of lease may be recorded by Tenant with the Middlesex South Registry of Deeds and/or filed with the Registry District of the Land Court, as appropriate (collectively, the "**Registry**") at Tenant's sole cost and expense. If a notice of lease was previously recorded with the Registry, upon the expiration or earlier termination of this Lease, Landlord shall deliver to Tenant a notice of termination of lease and Tenant shall promptly execute, acknowledge and deliver the same (together with any other instrument(s) that may be necessary in order to record and/or file the same with the Registry) to Landlord for Landlord's execution and recordation with the Registry, which obligation shall survive the expiration or earlier termination of the Lease. If Tenant fails to deliver the executed notice of termination of lease within ten (10) days of receipt thereof, time being of the essence, Tenant hereby appoints Landlord as Tenant's attorney-in-fact to execute the same, such appointment being coupled with an interest.

1.4. Appurtenant Rights.

(a) Common Areas. Subject to the terms of this Lease and the Rules and Regulations (hereinafter defined), Tenant shall have, as appurtenant to the Premises, rights to use in common with others entitled thereto, the areas designated from time to time for the common use of Tenant and other tenants of the Property (such areas are hereinafter referred to as the "**Common Areas**"). The Common Areas include: (i) the common lobby(ies), hallways, elevators and stairways of the Laboratory Addition serving the Premises, (ii) common walkways necessary for access to the Laboratory Addition, (iii) common rooftop areas within which the Rooftop Premises (hereinafter defined) are located and other common rooftop areas necessary for access thereto, (iv) the Atrium, (v) if the Premises include less than the entire rentable area of any floor, the common restrooms and other common facilities of such floor, (vi) the loading dock(s) serving the Building, and (vii) other areas designated by Landlord from time to time for the common use of Tenant and other tenants of the Laboratory Addition; and no other appurtenant rights or easements.

(b) Complex Areas. Subject to the terms of this Lease and reasonable rules and regulations promulgated with respect thereto (including without limitation rules regarding scheduling of access to the loading facilities serving the Building), Tenant shall have, as appurtenant to the Premises, rights to use in common with others entitled thereto, the areas designated from time to time pursuant to any REA (hereinafter defined) for the common use of tenants of the Property, including without limitation the Parking Areas, roadways, driveways and

other areas serving and/or providing access to/from the Building's loading dock(s), open space and indoor and outdoor bicycle storage with access to bicycle repair equipment (such areas are hereinafter referred to as the "**Complex Areas**"). As of the Execution Date, it is contemplated that the areas shown on the plan attached hereto as Exhibit 2B and made a part hereof, inter alia, shall be designated as Complex Areas.

(c) Parking. During the Tenn. commencing on the Rent Commencement Date. Landlord shall, subject to the terms hereof, make available to Tenant monthly parking passes for parking in the shared subsurface parking garage serving the Building (the "**Parking Areas**"), based upon a ratio of 0.8 parking pass for each 1,000 rentable square feet of the Premises, for the parking of passenger vehicles in unreserved stalls in the Parking Areas by Tenant's employees and the employees of any transferee pursuant to a Transfer permitted by Article 13 of this Lease ("**Permitted Pass Holders**"). Tenant shall receive one (1) parking pass, or other suitable device providing access to the Parking Areas, for each parking privilege paid for by Tenant. The number of parking passes provided to Tenant, as modified pursuant to this Lease or as otherwise permitted by Landlord, are hereinafter referred to as the "**Parking Passes.**" Tenant shall have no right to hypothecate or encumber the Parking Passes, and shall not sublet, assign, or otherwise transfer the Parking Passes except in connection with a Transfer permitted by Article 13 of this Lease. During the Term, commencing on the Rent Commencement Date, Tenant shall pay Landlord (or at Landlord's election, directly to the parking operator[3]) for all of the Parking Passes at the then-current prevailing rate, as such rate may vary from time to time. Landlord shall deliver (or cause to be delivered) written notice to Tenant of any change in the monthly parking charge. If, for any reason, Tenant shall fail timely to pay the charge for any of said Parking Passes, and if such default continues for ten (10) days after written notice thereof, Landlord shall have the right to revoke Tenant's right to the Parking Passes for which Tenant failed to pay the charge under this Section 1.4(c) and Landlord may allocate such Parking Passes for use by others free and clear of Tenant's rights under this Section 1.4(c). Use of the Parking Areas and the Parking Passes will be subject to such reasonable rules and regulations as may be in effect from time to time (including, without limitation, Landlord's right, without additional charge to Tenant above the prevailing rate for Parking Passes, to institute a valet or attendant-managed parking system). Tenant shall provide Landlord and/or the operator of the Parking Areas with such information as may be reasonably requested, including without limitation a monthly identification roster listing, for each Parking Pass, the name of the employee and the make, color and registration number of the vehicle to which it has been assigned. Except to the extent prohibited by Legal Requirements, neither Landlord nor the operator of the Parking Areas assumes any responsibility whatsoever for loss or damage due to casualty or theft or otherwise to any automobile or to any personal property therein, howsoever caused, and Tenant agrees to notify each Permitted Pass Holder of such limitation of liability. No bailment is intended or shall be created by the provision of, or use of, the parking privileges described herein. Reserved and handicap parking spaces must be honored. Landlord shall use commercially reasonable efforts to ensure that parking is not allocated to such an extent that Tenant is unable to utilize any of its Parking Passes. Notwithstanding anything to the contrary contained herein, Landlord shall have the right to relocate the parking privileges from time to time to other property owned, leased or controlled by Landlord or its affiliates, so long as such other property is within 1.000 feet of the Land.

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3 E.g., in the event that Landlord has leased or subleased the Parking Areas to a third party.

(d) Rooftop Premises. During the Term, Tenant shall have the right, at no additional rental charge, to use a portion of the rooftop of the Laboratory Addition designated by Landlord (the "**Rooftop Premises**") for the installation of certain equipment (which may include, without limitation, a standby power generator) serving only the Premises approved by Landlord and purchased and installed by Tenant (any equipment installed within the Rooftop Premises, as the same may be modified, altered or replaced during the Term, is collectively referred to herein as "**Tenant's Rooftop Equipment**"). Landlord's approval of such equipment shall not be unreasonably withheld, conditioned or delayed provided Tenant demonstrates to Landlord's reasonable satisfaction that the proposed equipment (i) does not interfere with any base building equipment operated by Landlord on the roof; (ii) will not affect the structural integrity of the Building or impact the roof or the roof membrane in any manner or void, or adversely affect Landlord's rights under, the roof warranty in any manner; (iii) shall be adequately screened so as to minimize the visibility of such equipment; and (iv) complies with all applicable Legal Requirements including without limitation sound-proofing to satisfy the same, as well as Landlord's specified maximum decibel levels for equipment operations. Tenant shall not install or operate Tenant's Rooftop Equipment until Tenant has obtained and submitted to Landlord copies of all required governmental permits, licenses, and authorizations necessary for the installation and operation thereof. In addition, Tenant shall comply with all reasonable construction rules and regulations promulgated by Landlord in connection with the installation, maintenance and operation of Tenant's Rooftop Equipment. Landlord shall have no obligation to provide any services including, without limitation, electric current or gas service, to the Rooftop Premises or to Tenant's Rooftop Equipment. Tenant shall be responsible for the cost of repairing and maintaining Tenant's Rooftop Equipment in good order, condition and repair and in compliance with Legal Requirements and for the cost of repairing any damage to the Building, or the cost of any necessary improvements to the Building, caused by or as a result of the installation, replacement and/or removal of Tenant's Rooftop Equipment. Landlord makes no warranties or representations to Tenant as to the suitability of the Rooftop Premises for the installation and operation of Tenant's Rooftop Equipment. Tenant shall use Landlord's designated roof contractor for any work impacting the roof or roof membrane. If any of Tenant's work on the roof of the Building, including without limitation the installation and maintenance of Tenant's Rooftop Equipment, damages the roof or invalidates or adversely affects any warranty, Tenant shall be fully responsible for the cost of repairs (and any subsequent repairs to the roof to the extent that any warranty is invalidated or adversely affected); it being acknowledged and agreed that, notwithstanding anything to the contrary contained herein, Landlord's waiver contained in Section 14.5 below shall not apply to the cost of any such repairs. In the event that at any time during the Term, Landlord determines, in its sole but bona fide business judgment, that the operation and/or periodic testing of Tenant's Rooftop Equipment interferes with the operation of the Building or the business operations of any of the occupants of the Building, then Tenant shall, upon notice from Landlord, cause all further testing of Tenant's Rooftop Equipment to occur after normal business hours (hereinafter defined). Landlord hereby reserves the right to install and to permit others to install, use and maintain equipment, antennas and similar installations on the rooftop of the Building. In connection with any maintenance, repair or replacement of the roof, Landlord may require Tenant to relocate within, on or in the Building any or all of Tenant's Rooftop Equipment to a location with comparable functionality, which

relocation shall be performed by Tenant, at Landlord's expense, within ninety (90) days of such request, except that such relocation shall be performed promptly and no later than thirty (30) days after request in the event of an emergency.

(e) Meeting Space. Subject to the terms of this Lease and reasonable rules and regulations (including without limitation rules and regulations pertaining to security and decorum), Tenant shall have, as appurtenant to the Premises, the right to use in common with others entitled thereto, portions of the sixth (6th) floor of the Building designated by Landlord from time to time ("**Meeting Space**") for meetings and events held and hosted by Tenant ("**Events**"). Promptly after the end of each Event, Tenant shall remove from the Meeting Space all decorations and other personal property used in connection with the Event (any personal property not timely removed therefrom shall be deemed abandoned). Subject to Section 14.5 of the Lease, Tenant shall, at Tenant's sole cost and expense, be responsible for any damage to the Building or personal property within the Building caused as a result of any Event (including without limitation any injury, breakage and damage caused by the acts or negligent omissions of Tenant or any of its employees, agents, contractors or invitees) and shall restore the Meeting Space to its condition immediately prior to such damage. Events shall be conducted by Tenant (i) at Tenant's sole cost and expense, (ii) in compliance with all legal and regulatory requirements applicable thereto, and (iii) lien-free. Tenant covenants and agrees to (A) not use the Meeting Space for any unlawful purpose or in any manner that will constitute waste, nuisance or unreasonable annoyance or unreasonably interfere with access to and from other areas on the sixth floor, (B) maintain order and decorum in and around all portions of the Meeting Space in association with such Events, and (C) not disturb occupants of the Building as a result of any Event. Without limiting the generality of the foregoing, in connection with any Event in which Tenant is serving or permitting the serving of alcoholic beverages, Tenant shall strictly comply with all applicable laws, rules, regulations, ordinances and other requirements of governmental authorities relating to the serving of alcoholic beverages, including without limitation, refusing to serve alcoholic beverages to people below the legal drinking age. Without limiting any other provision of this Lease, Tenant shall indemnify the Landlord Parties for any Claims arising from the use of the Meeting Space by any of the Tenant Parties, including without limitation Claims related to the provision of food and/or alcohol. Tenant shall cause each vendor and/or contractor engaged in connection with an Event to carry (1) commercial general liability insurance in the amount of One Million and 00/100 Dollars ($1,000,000.00) per occurrence and Two Million and 00/100 Dollars ($2,000,000.00) aggregate (and from time to time in such higher amounts as may be reasonably required by Landlord based on requirements of prudent owners of similar properties in East Cambridge), unless lesser limits are approved by Landlord in advance, on a primary and non-contributory basis, naming the Landlord Parties as additional insureds, (2) worker's compensation insurance with statutory limits and (3) liquor liability coverage, if alcohol will be provided, in the amount of Five Million and 00/100 Dollars ($5,000,000.00) (and from time to time in such higher amounts as may be reasonably required by Landlord based on requirements of prudent owners of similar properties in East Cambridge), unless lesser limits are approved by Landlord in advance, on a primary and non-contributory basis, naming the Landlord Parties as additional insureds. Tenant shall provide Landlord with evidence reasonably acceptable to Landlord of such general liability, worker's compensation and liquor liability insurance prior to each Event.

1.5. Tenant's Access.

(a) From and after the Term Commencement Date and until the end of the Term, Tenant shall have access to the Premises (and Permitted Pass Holders shall have access to the parking areas) twenty-four (24) hours a day, seven (7) days a week, subject to Legal Requirements, the Rules and Regulations, the terms of this Lease, Landlord's Force Majeure (hereinafter defined) and matters of record.

(b) Upon reasonable prior written notice to Landlord, and only so long as such access shall not (in Landlord's sole judgment) interfere with the preparation or performance of Landlord's Work, Tenant may access the applicable Phase (at Tenant's sole risk) at times approved by Landlord prior to the applicable Term Commencement Date, to install Tenant's wiring, cabling, furniture, fixtures and equipment therein. Tenant shall, prior to the first entry to either Phase pursuant to this Section 1.5(b), provide Landlord with certificates of insurance evidencing that the insurance required in Article 14 hereof is in full force and effect and covering any person or entity entering the Building. Tenant shall defend, indemnify and hold the Landlord Parties (hereinafter defined) harmless from and against any and all Claims (hereinafter defined) for injury to persons or property resulting from or relating to Tenant's access to and use of the Premises prior to the applicable Term Commencement Date as provided under this Section 1.5(b).

1.6. Exclusions. The following are expressly excluded from the Premises and reserved to Landlord: all the perimeter walls of the Premises (except the inner surfaces thereof), the Common Areas, and any space in or adjacent to the Premises used for shafts, stacks, pipes, conduits, wires and appurtenant fixtures, fan rooms, ducts, electric or other utilities, sinks or other Building facilities, and the use of all of the foregoing, except as expressly permitted pursuant to Section 1.4(a) above.

2. RIGHTS RESERVED TO LANDLORD

2.1. Additions and Alterations. Landlord reserves the right, at any time and from time to time, to make such changes, alterations, additions, improvements, repairs or replacements in or to the Property (including the Premises but, with respect to the Premises, only for purposes of repairs, maintenance, replacements and the exercise of any other rights expressly reserved to Landlord herein) and the fixtures and equipment therein, as well as in or to the street entrances and/or the Common Areas, as it may deem necessary or desirable ("**Changes**"), provided, however, that there be no material obstruction of permanent access to, or material interference with the use and enjoyment of, the Premises by Tenant. Subject to the foregoing, Landlord expressly reserves the right to temporarily close all, or any portion, of the Common Areas for the purpose of making repairs or changes thereto.

2.2. Additions to the Property. Landlord may at any time or from time to time (i) construct additional improvements and related site improvements (collectively, "**Future Development**") in all or any part of the Property, (ii) change the location or arrangement of (A) any improvement outside the Laboratory Addition in or on the Property and/or (B) all or any part of the Common Areas, and/or (iii) add or deduct any land to or from the Property; provided that there shall be no material increase in Tenant's obligations under this Lease in connection with the exercise of the foregoing reserved rights.

2.3. Landlord's Access. Subject to the terms hereof, Tenant shall (a) upon reasonable advance notice, which may be oral (except that no notice shall be required in emergency situations), permit Landlord, Fee Owner (hereinafter defined) and any holder of a Mortgage (hereinafter defined) (each such holder, a "**Mortgagee**"), and their respective agents, representatives, employees and contractors, where accompanied in non-routine and/or non-emergency situations by a representative of Tenant (so long as Tenant shall make such representative available upon at least one (1) business day's request), to have reasonable access to the Premises at all reasonable hours, for the purposes of inspection, making repairs, replacements or improvements in or to the Premises or the Building or equipment therein (including, without limitation, sanitary, electrical, heating, air conditioning or other systems), complying with all applicable laws, ordinances, rules, regulations, statutes, by-laws, court decisions and orders and requirements of all public authorities (collectively, "**Legal Requirements**"), or exercising any right reserved to Landlord under this Lease (including without limitation the right to take upon or through all necessary materials, tools and equipment); (b) permit Landlord and its agents and employees, at reasonable times, upon reasonable advance notice, to show the Premises during normal business hours (i.e. Monday - Friday 8:00 A.M. - 6:00 P.M., Saturday 8:00 A.M. - 1:00 P.M., excluding holidays) to any prospective Mortgagee, capital partner or purchaser of the Building and/or the Property or any portion thereof or of the interest of Landlord therein, and, during the last twenty-one (21) months of the Term or at any time after the occurrence of an Event of Default, prospective tenants; (c) upon reasonable prior written notice from Landlord, permit Landlord, Fee Owner and their agents and contractors, at Landlord's sole cost and expense, to perform environmental audits, environmental site investigations and environmental site assessments ("**Site Assessments**") in, on, under and at the Premises and the Land, it being understood that Landlord shall repair any damage arising as a result of the Site Assessments, and such Site Assessments may include both above and below the ground testing and such other tests as may be necessary or appropriate to conduct the Site Assessments; and (d) in case any excavation shall be made for building or improvements or for any other purpose upon the land adjacent to or near the Premises, afford without charge to Landlord, or the person or persons, firms or corporations causing or making such excavation, license to enter upon the Premises for the purpose of doing such work as Landlord or such person or persons, firms or corporation shall deem to be necessary to preserve the walls or structures of the Building from injury, and to protect the Building by proper securing of foundations. In addition, to the extent that it is necessary to enter the Premises in order to access any area that serves any portion of the Building outside the Premises, then Tenant shall, upon as much advance notice as is practical under the circumstances, and in any event at least twenty-four (24) hours' prior written notice (except that no notice shall be required in emergency situations), permit contractors engaged by other occupants of the Building to pass through the Premises in order to access such areas but only if accompanied by a representative of Landlord. The parties agree and acknowledge that, despite reasonable and customary precautions (which Landlord agrees it shall exercise), any property or equipment in the Premises of a delicate, fragile or vulnerable nature may nevertheless be damaged in the course of performing Landlord's obligations. Accordingly, Tenant shall take reasonable protective precautions appropriate for a lab operation in which sensitive property and equipment are used.

2.4. Pipes, Ducts and Conduits. Tenant shall permit Landlord to erect, use, maintain and relocate pipes, ducts and conduits in and through the Premises, provided the same do not materially reduce the floor area or materially adversely affect the appearance thereof.

2.5. Minimize Interference. Except in the event of an emergency, Landlord shall use commercially reasonable efforts, consistent with accepted construction practice in light of the Permitted Use when applicable, to minimize any materially adverse interference with Tenant's use and occupancy of the Premises as a result of the exercise of Landlord's rights under Sections 2.1-2.4 above, including providing reasonable advance notice to Tenant of construction activity that is reasonably expected to cause material interference with Tenant's use of the Premises. Tenant agrees to cooperate with Landlord as reasonably necessary in connection with the exercise of Landlord's rights under this Section 2. Subject to Landlord's obligations under this Section 2.5. Tenant further agrees that dust, noise, vibration, temporary closures of Common Areas, or other inconvenience or annoyance resulting from the exercise of Landlord's rights under this Article 2 shall not be deemed to be a breach of Landlord's obligations under the Lease.

2.6. Name and Address of Building. Landlord reserves the right at any time and from time to time to change the name or address of the Building and/or the Property or any portion thereof, provided Landlord gives Tenant at least three (3) months' prior written notice thereof.

2.7. REA; Condominium. Landlord and Tenant each hereby acknowledges and agrees that (i) Landlord shall have the right to enter into, and subject the Property to the terms and conditions of, one or more reciprocal easement agreements, declarations of covenants and/or cross-easement agreements with any one or more of the neighboring or nearby property owners (including any owner of any portion of the Property that may be divided from the whole) (each, a "**REA**"); (ii) this Lease shall be subject and subordinate to any REA, provided that (A) such REA shall not materially impair Tenant's use or occupancy of the Premises, (B) there shall be a reasonable allocation of costs thereunder, and (C) if any REA contains lien rights in favor of such neighboring or nearby property owners, such subordination shall be conditioned upon execution of a commercially reasonable subordination, non-disturbance and attornment agreement ("**SNDA**"): (iii) Landlord shall have the right to subdivide the Property so long as Tenant's use or occupancy of the Premises is not materially impaired; (iv) Landlord shall have the right to subject the Land and the improvements located now or in the future located thereon to a commercial condominium regime ("**Condominium**") on terms and conditions consistent with first-class office and retail buildings; (v) this Lease shall be subject and subordinate to the Master Deed and other documents evidencing the Condominium (collectively, the "**Condo Documents**") provided that Tenant's use or occupancy of the Premises is not materially impaired, and provided, further, that such subordination shall be conditioned upon execution of a SNDA; and (vi) Tenant shall execute such reasonable documents (which may be in recordable form) evidencing the foregoing within ten (10) business days after Landlord's request.

2.8. Construction in Vicinity. Tenant acknowledges that (a) Landlord and/or its affiliates ("**Neighboring Owners**") own several properties in the vicinity of the Building, (b) during the Term, the Neighboring Owners may undertake various construction projects, which may include the construction of new and/or additional buildings (each, a "**Project.**" and collectively, the "**Projects**"), and (c) customary construction impacts (taking into account the

urban nature of the Property, the proximity of the Building to the Project site and other relevant factors) may result therefrom. Landlord shall use commercially reasonable efforts to minimize (and cause its affiliates to minimize) materially adverse construction impacts in accordance with the mitigation plan described below. Prior to the commencement of any Project, Landlord shall deliver to Tenant a construction mitigation plan that shall detail such commercially reasonable mitigation measures which shall take the Permitted Use into consideration. Subject to Landlord's compliance with this paragraph, and notwithstanding any other provision of this Lease, in no event shall Landlord be liable to Tenant for any compensation or reduction of rent or any other damages arising from the Projects and Tenant shall not have the right to terminate the Lease due to the construction of the Projects, nor shall the same give rise to a claim in Tenant's favor that such construction constitutes actual or constructive, total or partial, eviction from the Premises. Notwithstanding any provision in this Lease to the contrary, in no event shall Tenant seek injunctive or any similar relief to stop, delay or modify any Project.

3. CONSTRUCTION

3.1. Condition of Premises. On the applicable Term Commencement Date, the applicable Phase of the Premises shall be delivered to Tenant free of personal property and occupants and with Landlord's Work with respect thereto substantially complete (as defined in the Work Letter). Subject to the foregoing, and subject further to Landlord's obligation to perform Landlord's Work in accordance with the terms of the Work Letter, Tenant acknowledges and agrees that Tenant is leasing each Phase in their "AS IS," "WHERE IS" condition and with all faults on the applicable Term Commencement Date without representations or warranties, express or implied, in fact or by law, of any kind, and without recourse to Landlord.

3.2. Tenant's Fitout. Tenant's Fitout shall be performed by Landlord in accordance with the Work Letter.

4. USE OF PREMISES.

4.1. Permitted Uses. During the Term, Tenant shall use the Premises only for the Permitted Uses and for no other purposes. Service and utility areas (whether or not a part of the Premises) shall be used only for the particular purpose for which they are designed. All corridor doors, when not in use, shall be kept closed. Tenant shall keep the Premises equipped with appropriate safety appliances to the extent required by Legal Requirements or insurance requirements.

4.2. Prohibited Uses.

(a) Notwithstanding any other provision of this Lease. Tenant shall not use the Premises or the Building, or any part thereof, or suffer or permit the use and/or occupancy of the Premises or the Building or any part thereof by Tenant and/or Tenant's agents, servants, employees, consultants, contractors, subcontractors, Working Partnerships, licensees and/or subtenants (collectively with Tenant, the "**Tenant Parties**") (i) in a manner which would violate any of the covenants, agreements, terms, provisions and conditions of this Lease; (ii) for any unlawful purposes or in any unlawful manner; (iii) in a manner which, in the reasonable

judgment of Landlord (taking into account the use of the Building as a combination laboratory, research and development and office building and the Permitted Uses) shall (a) impair the appearance or reputation of the Building; (b) impair, interfere with or otherwise diminish the quality of any of the Building services or the proper and economic heating, cleaning, ventilating, air conditioning or other servicing of the Building or Premises, or the use or occupancy of any of the Common Areas; (c) occasion discomfort, inconvenience or annoyance in any material respect (and Tenant shall not install or use any electrical or other equipment of any kind, including without limitation Tenant's Rooftop Equipment, which, in the reasonable judgment of Landlord, will cause any such impairment, interference, discomfort, inconvenience, annoyance or injury), or cause any injury or damage to any occupants of the Premises or other tenants or occupants of the Building or their property; or (d) cause harmful air emissions, laboratory odors or noises or any unusual or other objectionable odors, noises or emissions to emanate from the Premises; (iv) in a manner which is inconsistent with the operation and/or maintenance of the Building as a first-class combination office, research, development and laboratory facility; (v) for any fermentation processes whatsoever; or (vi) in a manner which shall increase such insurance rates on the Building or on property located therein over that applicable when Tenant first took occupancy of the Premises hereunder.

(b) With respect to the use and occupancy of the Premises and the Common Areas, Tenant will not: (i) place or maintain any garbage, trash, rubbish or other refuse (collectively, "**Trash**"), signage (except as may be permitted by Article 12 below) or other articles in any vestibule or entry of the Premises, on the footwalks or corridors adjacent thereto or elsewhere on the exterior of the Premises, nor obstruct any driveway, corridor, footwalk, parking area, mall or any other Common Areas; (ii) permit undue accumulations of or bum Trash within or without the Premises; (iii) permit the parking of vehicles so as to interfere with the use of any driveway, corridor, footwalk, parking area, or other Common Areas; (iv) receive or ship articles of any kind outside of those areas reasonably designated by Landlord; (v) conduct or permit to be conducted any auction, going out of business sale, bankruptcy sale (unless directed by court order), or other similar type sale in or connected with the Premises; (vi) use the name of Landlord, Fee Owner or any of Landlord's affiliates or subsidiaries in any publicity, promotion, trailer, press release, advertising, printed, or display materials without Landlord's prior written consent (which may be withheld in Landlord's sole discretion); (vii) except in connection with any vivarium, permit or keep any animals other than trained service animals in the Building; or (viii) except in connection with Alterations (hereinafter defined) permitted in accordance with Article 11 below, cause or permit any hole to be drilled or made in any part of the Building.

4.3. Chemical Safety Program.

(a) Tenant shall establish and maintain a chemical safety program administered by a licensed, qualified individual in accordance with the requirements of the Massachusetts Water Resources Authority ("**MWRA**") and any other applicable governmental authority. Tenant shall be solely responsible for all costs incurred in connection with such chemical safety program, and Tenant shall provide Landlord with such documentation as Landlord may reasonably require evidencing Tenant's compliance with the requirements of (i) the MWRA and any other applicable governmental authority with respect to such chemical safety program and (ii) this Section 4.3.

(b) Landlord shall use commercially reasonable efforts to obtain and maintain any permit required by Legal Requirements (including without limitation any permit required by the MWRA) with respect to the operation of the acid neutralization system and tank serving the Premises (which may also serve other portions of the Building, collectively, the "**Acid Neutralization System**"), but expressly excluding any permits, licenses or approvals required for Tenant's specific use thereof (for which Tenant shall be responsible). Tenant shall fully comply with the requirements of this Section 4.3 with respect to Tenant's use of any Acid Neutralization System. Tenant shall not introduce anything into the Acid Neutralization System, if any, (i) in violation of the terms of the permit issued by the MWRA concerning the Acid Neutralization System (the "**MWRA Permit**"), (ii) in violation of Legal Requirements, or (iii) that would interfere with the proper functioning of any Acid Neutralization System. Tenant agrees to reasonably cooperate with Landlord in connection with Landlord's efforts to obtain and/or maintain the MWRA Permit any other license, permit or approval relating to the Acid Neutralization System

4.4. Vivarium; ACF Elevator.

(a) Tenant shall be responsible, at its sole expense, for the operations of the vivarium in accordance with all Legal Requirements and with best industry practices. Without limiting the general application of the foregoing, Tenant shall separately dispose of all waste products from the operation of the vivarium, including, without limitation, dead animals, strictly in accordance with Legal Requirements. Landlord shall have the right, from time to time by written notice to Tenant, to promulgate reasonable rules and regulations with respect to the operation of the vivarium so as to minimize any adverse effects that such operation may have on other occupants of the Building, including without limitation, regulations as to noise mitigation.

(b) Transportation to and from the Premises of any animals, animal waste, food or supplies relating to any animals maintained from time to time in any animal storage areas of the Premises ("**Animal Transportation**") shall be subject to this Section 4.4 and Landlord's reasonable rules and regulations therefor (which shall include, inter aha, consideration for the multi-tenant nature of the Building and the permitted path of any Animal Transportation). Animal Transportation shall only occur from 3 PM to 7 AM. At all times that animals are transported to and from the Premises, they shall be transported in an appropriate cage or other container. At no time shall any animals, animal waste, food or supplies relating to the animals be brought into, transported through, or delivered to the lobby of the Building or be transported within the Building in elevators other than the ACF Elevator (hereinafter defined); provided, however, if the ACF Elevator is out-of-service, Tenant may use the freight elevator of the Building for such purposes.

(c) Notwithstanding anything to the contrary, Landlord and Tenant hereby agree as follows with respect to the freight elevator being installed by Landlord to provide direct freight elevator service to the vivarium within Phase 2 in substantially the location more particularly shown on the Lease Plan (the "**ACF Elevator**"):

(i) Tenant shall have the non-exclusive right to use the ACF Elevator on the terms and conditions set forth in this Lease. Tenant shall not (and shall not permit any other Tenant Party to) use the ACF Elevator for any purpose other than Animal Transportation.

(ii) Landlord shall maintain the ACF Elevator in such good repair, order and condition as the same is in when the ACF Elevator is substantially complete, reasonable wear and tear, loss by Taking and damage by Casualty excepted, and shall repair and, as necessary, replace the same in order to keep the ACF Elevator in such condition. Tenant shall reimburse Landlord for fifty percent (50%) of the costs incurred in connection with such maintenance, repair and replacement within thirty (30) days after demand from time to time, but in event more than monthly.

5. RENT; ADDITIONAL RENT

5.1. Base Rent. Tenant shall pay to Landlord Base Rent in equal monthly installments, in advance and without demand on the first day of each month for and with respect to such month (except that, if the Rent Commencement Date is any day other than the first day of a calendar month, Base Rent due for the period between the Rent Commencement Date and the last day of the calendar month in which the Rent Commencement Date occurs shall be due on the Rent Commencement Date). Unless otherwise expressly provided herein, the payment of Base Rent and additional rent and other charges reserved and covenanted to be paid under this Lease with respect to the Premises (collectively, "**Rent**") shall commence on the Rent Commencement Date, and shall be prorated for any partial months. Rent shall be payable to Landlord or, if Landlord shall so direct in writing, to Landlord's agent or nominee, in lawful money of the United States which shall be legal tender for payment of all debts and dues, public and private, at the time of payment. In no event shall Tenant pay any installment of Base Rent more than one (1) month in advance.

5.2. Operating Costs.

(a) "**Operating Costs**" shall mean all reasonable costs incurred and expenditures of whatever nature made by Landlord in the operation, management, repair, replacement, maintenance and insurance (including without limitation environmental liability insurance and property insurance on Landlord-supplied leasehold improvements for tenants, but not property insurance on tenants' equipment) of the Laboratory Addition or allocated to the Laboratory Addition, including without limitation: all costs of labor (wages, salaries, fringe benefits, etc.) up to and including the group or portfolio manager, however denominated (allocated equitably to all properties under the responsibility of such group or portfolio manager); any costs for utilities supplied to exterior areas and the Common Areas; any costs for repair and replacements, cleaning and maintenance of exterior areas and the Common Areas, related equipment, facilities and appurtenances and HVAC equipment; costs of consultants and/or experts engaged to evaluate cost-savings measures for the Building (such as, but not limited to, tax and energy conservation consultants); costs relating to open space serving the Kendall Square complex; costs incurred pursuant to any REA and/or Condo Documents (including without limitation costs related to the operation, management, repair, replacement, maintenance, and insurance of the Complex Areas and real estate taxes assessed with respect to the Complex Areas); any operating costs charged pursuant to the Master Lease; costs incurred in connection with the PTDM; costs of security services; a market rate management fee no greater than 4% of gross revenues paid to Landlord's property manager; the costs, including, without limitation, a commercially reasonable rental factor, of Landlord's management office for the Property (which management office may be located outside the Laboratory Addition and which

may serve other properties in addition to the Laboratory Addition (in which event the costs thereof shall be equitably allocated among the properties served by such office)); and the cost of operating any amenities in the Property available to all tenants of the Laboratory Addition and any subsidy provided by Landlord for or with respect to any such amenity. For costs and expenditures made by Landlord in connection with the operation, management, repair, replacement, maintenance and insurance of the Property as a whole, Landlord shall make a reasonable allocation thereof between the retail areas, the Office Building and the Laboratory Addition. Operating Costs shall not include Excluded Costs (hereinafter defined). Landlord shall have the right but not the obligation, from time to time, to equitably allocate some or all of the Operating Costs among different tenants of the Building (for example, and without limiting the generality of the foregoing, based in whole or in part on shared or similar use of particular systems or equipment).

(b) "**Excluded Costs**" shall be defined as (i) any mortgage charges (including interest, principal, points and fees); (ii) brokerage commissions; (iii) salaries of executives and owners not directly employed in the management/operation of the Property; (iv) the cost of work done by Landlord for a particular tenant; (v) the cost of items which, by generally accepted accounting principles, would be capitalized on the books of Landlord or are otherwise not properly chargeable against income, except to the extent such capital item is (A) required by any Legal Requirements enacted after the Phase 1 Term Commencement Date, (B) reasonably projected to reduce Operating Costs (in which event the expense shall be included as Operating Costs solely to the greater of (1) actual savings realized, or (2) reasonably projected savings), or (C) reasonably expected to improve the management and/or operation of the Building, such capital items to be amortized over their useful lives; (vi) any contributions made by Landlord to any tenant of the Property in connection with the build-out of its premises; (vii) franchise or income taxes imposed on Landlord; (viii) costs paid directly by individual tenants to suppliers, including tenant electricity, telephone and other utility costs; (ix) increases in premiums for insurance when such increase is caused by the use of the Property by Landlord or any other tenant of the Property; (x) maintenance and repair of capital items not a part of the Property; (xi) depreciation of the Property; (xii) costs relating to maintaining Landlord's existence as a corporation, partnership or other entity, and related corporate overhead costs; (xiii) advertising and other fees and costs incurred in procuring tenants; (xiv) the cost of any items for which Landlord is actually reimbursed by insurance, condemnation awards, refund, rebate or otherwise, and any expenses for repairs or maintenance to the extent covered by warranties, guaranties and service contracts; (xv) costs incurred in connection with any disputes between Landlord and its employees, between Landlord and Building management, or between Landlord and other tenants or occupants; and (xvi) the costs of the initial development and construction of the Building (including without limitation the costs of Landlord's Work, mitigation payments, impact fees associated therewith, if any (including traffic mitigation expenses or payments pursuant to the approvals for the project), or costs to repair construction or design defects); provided, however, that the foregoing shall not exclude from Operating Costs the reasonable costs incurred in connection with the Parking Traffic Demand Management Plan, as more particularly described below; (xvii) amounts paid to affiliates of Landlord to the extent in excess of customary amounts for such services; (xviii) penalties and costs incurred as a result of violations of Legal Requirements by Landlord or its agents, contractors or tenants; (xix) reserves; (xx) Landlord's political or charitable contributions, (xxi) the cost of acquiring (as opposed to leasing) sculptures, paintings and other objects of art; (xxii) income taxes or similar taxes paid by Landlord or the

owner of any interest in the Property; (xxiii) the cost of testing, remediation, removal, transportation or storage of Hazardous Materials in on or under the Property, provided, however, with respect to the testing, remediation, removal, transportation or storage of (A) any material or substance that is part of the Building on the applicable Term Commencement Date and which, as of the applicable Term Commencement Date, is not considered, as a matter of law, to be a Hazardous Material, but which is subsequently determined to be a Hazardous Material as a matter of law and must be remediated or removed, and (B) any material or substance located in the Building after the applicable Term Commencement Date and which, when placed in the Building was not considered as a matter of law to be a Hazardous Material but which is subsequently determined to be a Hazardous Material as a matter of law, then the costs thereof may be included in Operating Costs; and (xxiv) base rent payable under any underlying ground or master lease (but operating costs and expenses payable thereunder shall be included in Operating Costs to the extent otherwise permitted as Operating Costs hereunder). In no event in any year shall Landlord collect more than one hundred percent (100%) of the actual Operating Costs for such year from Tenant and the other tenants of the Laboratory Addition, and Landlord shall not recover the costs of any item more than once; provided, however, Tenant's sole remedy for Landlord's breach of this sentence shall be to receive Tenant's Share of the amount overcharged.

(c) Payment of Operating Costs. Commencing on the Phase 1 Term Commencement Date, and thereafter throughout the Term, Tenant shall pay to Landlord, as additional rent, Tenant's Share of Operating Costs with respect to the entire Premises. Landlord may make a good faith estimate of Tenant's Share of Operating Costs for any fiscal year or part thereof during the Term, and Tenant shall pay to Landlord, on the Phase 1 Term Commencement Date and on the first (1st) day of each calendar month thereafter, an amount equal to Tenant's Share of Operating Costs for such fiscal year and/or part thereof divided by the number of months therein. Landlord may estimate and re-estimate Tenant's Share of Operating Costs and deliver a copy of the estimate or re-estimate to Tenant. Thereafter, the monthly installments of Tenant's Share of Operating Costs shall be appropriately adjusted in accordance with the estimations so that, by the end of the fiscal year in question, Tenant shall have paid all of Tenant's Share of Operating Costs as estimated by Landlord. Any amounts paid based on such an estimate shall be subject to adjustment as herein provided when actual Operating Costs are available for each fiscal year.

(d) Annual Reconciliation. Landlord shall, within one hundred twenty (120) days after the end of each fiscal year, deliver to Tenant a reasonably detailed statement of the actual amount of Operating Costs for such fiscal year ("**Year End Statement**"). Failure of Landlord to provide the Year End Statement within the time prescribed shall not relieve Tenant from its obligations hereunder. If the total of such monthly remittances on account of any fiscal year is greater than Tenant's Share of Operating Costs actually incurred for such fiscal year, then provided there is no Event of Default nor any event which, with the passage of time and/or the giving of notice would constitute an Event of Default, Tenant may credit the difference against the next installment of additional rent on account of Operating Costs due hereunder, except that if such difference is determined after the end of the Term, Landlord shall refund such difference to Tenant within thirty (30) days after such determination to the extent that such difference exceeds any amounts then due from Tenant to Landlord (it being understood and agreed that if Tenant cures any default prior to the expiration of the notice and/or cure periods set forth in

Section 20.1 below, Tenant shall then be entitled to take such credit). If the total of such remittances is less than Tenant's Share of Operating Costs actually incurred for such fiscal year, Tenant shall pay the difference to Landlord, as additional rent hereunder, within thirty (30) days of Tenant's receipt of an invoice therefor. Landlord's estimate of Operating Costs for the next fiscal year shall be based upon the Operating Costs actually incurred for the prior fiscal year as reflected in the Year-End Statement plus a reasonable adjustment based upon estimated increases in Operating Costs.

(e) Part Years. If the Rent Commencement Date or the Expiration Date occurs in the middle of a fiscal year, Tenant shall be liable for only that portion of the Operating Costs with respect to such fiscal year within the Term.

(f) Gross-Up. If, during any fiscal year, less than 95% of the Laboratory Addition is occupied by tenants or if Landlord was not supplying 95% of tenants with the services being supplied to Tenant hereunder, actual Operating Costs incurred shall be reasonably extrapolated by Landlord on an item- by-item basis to the reasonable Operating Costs that would have been incurred if the Laboratory Addition was 95% occupied and such services were being supplied to 95% of tenants, and such extrapolated Operating Costs shall, for all purposes hereof, be deemed to be the Operating Costs for such fiscal year. This "gross up" treatment shall be applied only with respect to variable Operating Costs arising from services provided to Common Areas or to space in the Laboratory Addition being occupied by tenants (which services are not provided to vacant space or may be provided only to some tenants) in order to allocate equitably such variable Operating Costs to the tenants receiving the benefits thereof.

(g) Audit Right. Provided there is no Event of Default nor any event which, with the passage of time and/or the giving of notice would constitute an Event of Default, Tenant may, upon at least thirty (30) days' prior written notice, inspect or audit Landlord's records relating solely to Operating Costs for the fiscal year covered by the Year End Statement in question. However, no audit or inspection shall extend to periods of time before the Phase 1 Term Commencement Date. If Tenant fails to object to the calculation of Tenant's Share of Operating Costs on the Year-End Statement within one hundred twenty (120) days after such statement has been delivered to Tenant and/or fails to complete any such audit or inspection within one hundred eighty (180) days after receipt of the Year End Statement, then Tenant shall be deemed to have waived its right to object to the calculation of Tenant's Share of Operating Costs for the year in question and the calculation thereof as set forth on such statement shall be final. Landlord's records shall be made available electronically or, at Landlord's election, at Landlord's offices or the offices of Landlord's property manager during business hours reasonably designated by Landlord. Tenant shall pay the cost of such audit or inspection, provided, however, if Tenant's inspection or audit reveals an overcharge of more than five percent (5%), then Landlord shall reimburse Tenant for up to Ten Thousand Dollars ($ 10,000) of the reasonable cost of such audit or inspection within thirty (30) days of receipt of a reasonably detailed invoice therefor. Tenant may not conduct an inspection or have an audit performed more than once during any fiscal year. If such inspection or audit reveals that an error was made in the calculation of Tenant's Share of Operating Costs previously charged to Tenant and Landlord does not reasonably object to such inspection or audit results, then, provided no Event of Default has occurred nor an event which, with the passage of time and/or the giving of notice would constitute an Event of Default, and provided, further, that Tenant has delivered to

Landlord a copy of the final inspection or audit report reflecting such error, Tenant may credit the difference against the next installment of additional rent on account of Operating Costs due hereunder, except that if such difference is determined after the end of the Term, Landlord shall refund such difference to Tenant within thirty (30) days after such determination to the extent that such difference exceeds any amounts then due from Tenant to Landlord (it being understood and agreed that if Tenant cures any default prior to the expiration of the notice and/or cure periods set forth in Section 20.1 below, Tenant shall then be entitled to take such credit or refund, as the case may be). If such inspection or audit reveals an underpayment by Tenant, then Tenant shall pay to Landlord, as additional rent hereunder, any underpayment of any such costs, as the case may be, within thirty (30) days after receipt of an invoice therefor. Tenant shall maintain the results of any such audit or inspection confidential and shall not be permitted to use any third party to perform such audit or inspection, other than an independent firm of certified public accountants (A) reasonably acceptable to Landlord, (B) which is not compensated on a contingency fee basis or in any other manner which is dependent upon the results of such audit or inspection, and (C) which executes Landlord's standard confidentiality agreement whereby it shall agree to maintain the results of such audit or inspection confidential. Tenant hereby acknowledges and agrees that Tenant's sole right to contest Landlord's Year End Statement shall be as expressly set forth in this Section 5.2(g). Tenant hereby waives any and all other rights provided pursuant to any Legal Requirements to examine Landlord's books and records and/or to contest Landlord's Year End Statement. No subtenant or licensee shall have any right to conduct any such examination.

5.3. Taxes.

(a) "**Taxes**" shall mean the real estate taxes and other taxes, levies and assessments imposed upon the Building and the tax lot(s) on which the Building is located (the "**Tax Lot**") and any other buildings located on the Tax Lot (collectively, the "**Tax Property**"), and upon any personal property of Landlord used in the operation thereof, or on Landlord's interest therein or such personal property or reasonably allocated thereto; charges, fees and assessments for transit, housing, police, fire or other services or purported benefits to the Tax Property (including without limitation any community preservation assessments and/or business improvement district assessments); service or user payments in lieu of taxes; and any and all other taxes, levies, betterments, assessments and charges arising from the ownership, leasing, operation, use or occupancy of the Tax Property or based upon rentals derived therefrom, which are or shall be imposed by federal, state, county, municipal or other governmental authorities. To the extent Taxes are assessed against the Tax Property as a whole, such amounts shall be allocated among the buildings located on the Tax Lot and shall be based on the assessor's records or, if the records do not provide a separate allocation, based on square footage of the buildings in question unless Landlord reasonably determines that such allocation should be made on another basis. Furthermore, if different tax rates apply to spaces in the buildings located on the Tax Lot, Taxes will be allocated based on the applicable tax rate (e.g., if retail space is taxed at a different rate than office space, then Taxes subject to such different rate shall be allocated accordingly). If any such Tax is levied or assessed directly against Tenant, then Tenant shall be responsible for and shall pay the same at such times and in such manner as the taxing authority shall require. From and after substantial completion of any occupiable improvements constructed as part of a Future Development, if such improvements are not separately assessed, Landlord shall reasonably allocate Taxes between the Building and such improvements and the land area

associated with the same. Taxes shall not include any inheritance, estate, succession, gift, franchise, rental, income or profit tax, capital stock tax, capital levy or excise, or any income taxes arising out of or related to the ownership, operation or development of the Tax Property (including linkage fees, mitigation payments, import fees and similar charges), provided, however, that any of the same and any other tax, excise, fee, levy, charge or assessment, however described, that may in the future be levied or assessed as a substitute for or in addition to, in whole or in part, any tax, levy or assessment which would otherwise constitute Taxes, whether or not now customary or in the contemplation of the parties on the Execution Date of this Lease, shall constitute Taxes, but only to the extent calculated as if the Tax Property were the only real estate owned by Landlord. "**Taxes**" shall also include reasonable expenses (including without limitation legal and consultant fees) of tax abatement or other proceedings contesting assessments or levies. Tenant shall pay, prior to delinquency, any and all Taxes levied or assessed against any personal property or trade fixtures placed by Tenant in the Premises, whether levied or assessed against Landlord or Tenant. If any Taxes on Tenant's personal property or trade fixtures are levied against Landlord or Landlord's property, or if the assessed valuation of the Tax Property is increased by a value attributable to improvements in or alterations to the Premises made by Tenant (and expressly excluding Landlord's Work), whether owned by Landlord or Tenant and whether or not affixed to the real property so as to become a part thereof, Landlord shall have the right, but not the obligation, to pay such Taxes. The amount of any such payment by Landlord shall constitute additional rent due from Tenant to Landlord within thirty (30) days of invoice therefor.

(b) "**Tax Period**" shall be any fiscal/tax period in respect of which Taxes are due and payable to the appropriate governmental taxing authority (i.e., as mandated by the governmental taxing authority), any portion of which period occurs during the Term of this Lease.

(c) Payment of Taxes. Commencing on the Phase 1 Term Commencement Date, and thereafter throughout the Term, Tenant shall pay to Landlord, as additional rent, Tenant's Tax Share of Taxes with respect to the entire Premises. Landlord may make a good faith estimate of the Taxes to be due by Tenant for any Tax Period or part thereof during the Term, and Tenant shall pay to Landlord, on the Phase 1 Term Commencement Date and on the first (1st) day of each calendar month thereafter, an amount equal to Tenant's Tax Share of Taxes for such Tax Period or part thereof divided by the number of months therein. Landlord may estimate and re-estimate Tenant's Tax Share of Taxes and deliver a copy of the estimate or re-estimate to Tenant. Thereafter, the monthly installments of Tenant's Tax Share of Taxes shall be appropriately adjusted in accordance with the estimations so that, by the end of the Tax Period in question, Tenant shall have paid all of Tenant's Tax Share of Taxes as estimated by Landlord. Any amounts paid based on such an estimate shall be subject to adjustment as herein provided when actual Taxes are available for each Tax Period. If the total of such monthly remittances is greater than Tenant's Tax Share of Taxes actually due for such Tax Period, then, provided no Event of Default has occurred nor any event which, with the passage of time and/or the giving of notice would constitute an Event of Default, Tenant may credit the difference against the next installment of additional rent on account of Taxes due hereunder, except that if such difference is determined after the end of the Term, Landlord shall refund such difference to Tenant within thirty (30) days after such determination to the extent that such difference exceeds any amounts then due from Tenant to Landlord (it being understood and agreed that if Tenant cures any

default prior to the expiration of the notice and/or cure periods set forth in Section 20.1 below, Tenant shall then be entitled to take such credit or refund, as the case may be). If the total of such remittances is less than Tenant's Tax Share of Taxes actually due for such Tax Period, Tenant shall pay the difference to Landlord, as additional rent hereunder, within thirty (30) days of Tenant's receipt of an invoice therefor. Landlord's estimate for the next Tax Period shall be based upon actual Taxes for the prior Tax Period plus a reasonable adjustment based upon estimated increases in Taxes. In the event that Payments in Lieu of Taxes ("**PILOT**"), instead of or in addition to Taxes, are separately assessed to certain portions of the Building or the Property including the Premises, Tenant agrees, except as otherwise expressly provided herein to the contrary , to pay to Landlord, as additional rent, the portion of such PILOT attributable to the Premises in the same manner as provided above for the payment of Taxes.

(d) Effect of Abatements. Appropriate credit against Taxes or PILOT shall be given for any refund obtained by reason of a reduction in any Taxes by the assessors or the administrative, judicial or other governmental agency responsible therefor after deduction of Landlord's expenditures for reasonable legal fees and for other reasonable expenses incurred in obtaining the Tax or PILOT refund.

(e) Part Years. If the Phase 1 Term Commencement Date or the Expiration Date occurs in the middle of a Tax Period. Tenant shall be liable for only that portion of the Taxes, as the case may be. with respect to such Tax Period within the Term.

5.4. Late Payments.

(a) Any payment of Rent due hereunder not paid when due shall bear interest for each month or fraction thereof from the due date until paid in full at the annual rate of twelve percent (12%), or at any applicable lesser maximum legally permissible rate for debts of this nature (the "**Default Rate**"). Acceptance of interest or any partial payment shall not constitute a waiver of Tenant's default with respect to the overdue amount or prevent Landlord from exercising any of the other rights and remedies available to Landlord under this Lease or at law or in equity now or hereafter in effect.

(b) For each Tenant payment check to Landlord that is returned by a bank for any reason. Tenant shall pay a returned check charge equal to the amount as shall be customarily charged by Landlord's bank at the time.

(c) (c) Money paid by Tenant to Landlord shall be applied to Tenant's account in the following order: first, to any unpaid additional rent, including without limitation late charges, returned check charges, legal fees and/or court costs chargeable to Tenant hereunder; and then to unpaid Base Rent.

5.5. No Offset; Independent Covenants; Waiver. Rent shall be paid without notice or demand, and without setoff, counterclaim, defense, abatement, suspension, deferment, reduction or deduction, except as expressly provided in Section 9.6(b) of this Lease and Section 2(f) of the Work Letter. TENANT WAIVES ALL RIGHTS (I) TO ANY ABATEMENT, SUSPENSION, DEFERMENT, REDUCTION OR DEDUCTION OF OR FROM RENT EXCEPT AS EXPRESSLY PROVIDED IN Section 9.6(b) OF THIS LEASE AND SECTION 2(f)

OF THE WORK LETTER, AND (II) TO QUIT, TERMINATE OR SURRENDER THIS LEASE OR THE PREMISES OR ANY PART THEREOF EXCEPT AS EXPRESSLY PROVIDED IN SECTION 15.2 HEREOF AND SECTION 2(f) OF THE WORK LETTER. TENANT HEREBY ACKNOWLEDGES AND AGREES THAT THE OBLIGATIONS OF TENANT UNDER THIS LEASE SHALL BE SEPARATE AND INDEPENDENT COVENANTS AND AGREEMENTS, THAT RENT SHALL CONTINUE TO BE PAYABLE IN ALL EVENTS AND THAT THE OBLIGATIONS OF TENANT HEREUNDER SHALL CONTINUE UNAFFECTED, UNLESS THE REQUIREMENT TO PAY OR PERFORM THE SAME SHALL HAVE BEEN TERMINATED PURSUANT TO AN EXPRESS PROVISION OF THIS LEASE. LANDLORD AND TENANT EACH ACKNOWLEDGES AND AGREES THAT THE INDEPENDENT NATURE OF THE OBLIGATIONS OF TENANT HEREUNDER REPRESENTS FAIR, REASONABLE, AND ACCEPTED COMMERCIAL PRACTICE WITH RESPECT TO THE TYPE OF PROPERTY SUBJECT TO THIS LEASE, AND THAT THIS AGREEMENT IS THE PRODUCT OF FREE AND INFORMED NEGOTIATION DURING WHICH BOTH LANDLORD AND TENANT WERE REPRESENTED BY COUNSEL SKILLED IN NEGOTIATING AND DRAFTING COMMERCIAL LEASES IN MASSACHUSETTS, AND THAT THE ACKNOWLEDGEMENTS AND AGREEMENTS CONTAINED HEREIN ARE MADE WITH FULL KNOWLEDGE OF THE HOLDING IN WESSON V. LEONE ENTERPRISES. INC.. 437 MASS. 708 (2002). SUCH ACKNOWLEDGEMENTS, AGREEMENTS AND WAIVERS BY TENANT ARE A MATERIAL INDUCEMENT TO LANDLORD ENTERING INTO THIS LEASE.

5.6. Survival. Any obligations under this Article 5 which shall not have been paid at the expiration or earlier termination of the Term shall survive such expiration or earlier termination and shall be paid when and as the amount of same shall be determined and be due.

6. RIGHT OF FIRST OFFER

6.1. Right of First Offer. Subject to the provisions of this Article 6, from and after the date on which all rentable areas on the eleventh (11th) floor of the Laboratory Addition (the "**ROFO Space**") are initially leased, and provided that as of the date of the ROFO Notice (hereinafter defined) (i) there is no Monetary Default nor any Event of Default, and (ii) Tenant has not subleased more than 25% of the Premises, Tenant shall have a one-time right of first offer to lease the ROFO Space if, as and when the same shall become available for lease on a full floor basis during the Initial Term, at the fair market rental value of the ROFO Space (taking into account all relevant factors), for a term specified in the ROFO Notice (which shall run at least until the expiration of the Initial Term) (the "**ROFO Term**"), and otherwise upon the terms and conditions specified in the ROFO Notice. It is understood and agreed that Tenant shall not have any right to lease less than the entire eleventh (11th) floor pursuant to this Article 6 unless Landlord elects, in its sole discretion, to make the eleventh (11th) floor a multi-tenant floor and lease portions of the eleventh floor to different tenants, in which event the "**ROFO Space**" shall be deemed to refer to any of such portions. Tenant's right of first offer under this Article 6 is subject only to the currently-existing extension rights of the initial tenant of the ROFO Space.

6.2. Offer and Acceptance Procedures for Right of First Offer.

(a) After Landlord determines, in its reasonable judgment, that the ROFO Space is available for lease and all of the preconditions to the right of first offer granted to Tenant in this Article 6 have been met, Landlord shall deliver to Tenant a written notice offering to lease the ROFO Space to Tenant upon the terms and conditions set forth herein (the "**ROFO Notice**"). The ROFO Notice shall identify the size, location and availability date of the ROFO Space, the length of the ROFO Term and Landlord's determination of the fair market rental value of the ROFO Space. Tenant then shall have ten (10) days after receipt of the ROFO Notice to notify Landlord in writing ("**Tenant's ROFO Response**") whether Tenant will exercise its right to lease the ROFO Space upon the terms and conditions described in the ROFO Notice.

(b) If Tenant fails to notify Landlord in writing within such 10-day period that Tenant accepts the offer contained in the ROFO Notice, or if Tenant refuses in writing the offer contained in the ROFO Notice, Landlord shall have the right to lease the ROFO Space to any third party tenant on whatever terms and conditions Landlord may decide in its sole discretion, provided that such terms are not less than ninety-five percent (95%) of the net effective rent (hereinafter defined) set forth in the ROFO Notice. As used herein, the term "net effective rent" shall mean the net present value of the rent, additional rent, and other charges that would be payable to Landlord under the terms of any proposed lease for and with respect to that portion of the term of the proposed lease equal to the ROFO Term, taking into account any construction allowance, the cost of any leasehold improvements proposed to be performed by Landlord, any free rent, and any other monetary inducements payable by Landlord under such proposed lease.

(c) If Tenant timely notifies Landlord of its desire to lease the ROFO Space pursuant to this Article 6, (i) unless Tenant's ROFO Response indicates that Tenant desires to determine the fair market rental value of the ROFO Space in accordance with the Determination Process (in which event the fair market rental value of the ROFO Space shall be determined in accordance with the Determination Process), Landlord's determination of the fair market rental value shall be binding on Landlord and Tenant; and (ii) the Term of this Lease with respect to the originally demised Premises shall be extended to be coterminous with the ROFO Term if the term for the ROFO space would end later than the expiration of the Initial Term (such extension, the "**Extended Term**") and the base rent payable with respect to the originally demised Premises during the Extended Term shall be equal to the greater of (A) the base rental rate applicable to the ROFO Space (on a per rentable square foot basis), and (B) the Base Rent payable with respect to the originally demised Premises in effect immediately prior to the Extended Term, increased by 3% on the first day of the Extended Term and annually thereafter. Notwithstanding the fact that Tenant's proper and timely acceptance of such offer to lease the ROFO Space shall be self-executing, Landlord shall submit to Tenant, and Tenant shall execute and deliver to Landlord within forty-five (45) days of receipt thereof, a lease amendment which incorporates all of the terms and conditions set forth in the ROFO Notice. Landlord and Tenant shall reasonably diligently negotiate such lease amendment in good faith. The execution of such lease amendment shall not be deemed to waive any of the conditions to Tenant's exercise of its rights under this Article 6. If Tenant fails to execute and deliver the lease amendment within said forty-five (45) day period, subject to reasonable extensions of time if the parties are negotiating significant terms in good faith, then subject to the provisions of Section 6.2(b) above, Tenant's right to lease the ROFO Space shall terminate and shall be null and void, and Landlord shall have no further

obligation to lease the ROFO Space to Tenant and may lease any or all of the ROFO Space to another party upon such terms and conditions as Landlord may deem appropriate, free and clear of any rights in favor of Tenant contained herein.

6.3. Termination of Rights. All rights of Tenant under this Article 6 shall terminate upon the expiration or earlier termination of the Term of this Lease.

6.4. Rights Personal to Tenant. Except in connection with an assignment of all of Tenant's right, title and interest in and to this Lease and the Premises in accordance with Section 13.4(a) below, Tenant may not assign, mortgage, pledge, encumber or otherwise transfer its interest or rights under this Article 6, and any such purported transfer or attempt to transfer shall be void and without effect, shall terminate Tenant's rights under this Article 6, and shall constitute an Event of Default under this Lease.

6.5. Time is of the Essence. Time is of the essence with respect to all aspects of this Article 6.

7. LETTER OF CREDIT

7.1. Amount. Contemporaneously with the execution of this Lease, Tenant shall deliver to Landlord, an irrevocable letter of credit which shall (a) be in the amount specified in the Lease Summary Sheet and otherwise in the form attached hereto as Exhibit 7; (b) issued by a FDIC insured financial institution (i) reasonably acceptable to Landlord upon which presentment may be made in Boston, Massachusetts (if Landlord so requires at the time of its approval thereof), and (ii) which satisfies the Minimum Rating Agency Threshold and the Minimum Capital Threshold (as such terms are hereinafter defined); and (c) be for a term of one (1) year, subject to extension in accordance with the terms hereof (the "**Letter of Credit**"). The Letter of Credit shall be held by Landlord, without liability for interest, as security for the faithful performance by Tenant of all of the terms, covenants and conditions of this Lease by the Tenant to be kept and performed during the Term. In no event shall the Letter of Credit be deemed to be a prepayment of Rent nor shall it be considered a measure of liquidated damages. Unless the Letter of Credit is automatically renewing, at least thirty (30) days prior to the maturity date of the Letter of Credit (or any replacement Letter of Credit), Tenant shall deliver to Landlord a replacement Letter of Credit which shall have a maturity date no earlier than the next anniversary of the Term Commencement Date or one (1) year from its date of delivery to Landlord, whichever is later.

(a) If no Event of Default has occurred and no event has occurred which, with the passage of time and/or the giving of notice, would constitute an Event of Default and further provided that there is no material adverse change in Tenant's tangible net worth (as defined in Section 13.4 below) as verified by Landlord based upon a certificate from Tenant's chief financial officer and audited financials, then the face amount of the Letter of Credit may be reduced by Tenant to (a) $8,874,622.53 on or after the Phase 1 Rent Commencement Date, (b) $5,916,415.02 on or after the commencement of Rent Year 2, and (c) $3,944,276.68 on or after the commencement of Rent Year 3; it being understood and agreed that if Tenant cures any default prior to the expiration of the notice and/or cure periods set forth in Section 20.1 below, or Tenant thereafter demonstrates that there is no longer a material adverse change in Tenant's

tangible net worth, Tenant shall then be entitled to obtain a Letter of Credit in the reduced face amount in accordance with this Section 7.1(a). Landlord shall, at no cost to Landlord, cooperate with Tenant and the issuer of the Letter of Credit in connection with the amendment of the Letter of Credit to effectuate such reduction. Tenant hereby certifies that Tenant's tangible net worth as of February 28. 2019 was at least One Hundred Fifty Million Dollars ($150,000,000.00).

7.2. Application of Proceeds of Letter of Credit. Upon an Event of Default, or if any proceeding shall be instituted by or against Tenant pursuant to any of the provisions of any Act of Congress or State law relating to bankruptcy, reorganizations, arrangements, compositions or other relief from creditors (and, in the case of any proceeding instituted against it, if Tenant shall fail to have such proceedings dismissed within thirty (30) days) or if Tenant is adjudged bankrupt or insolvent as a result of any such proceeding, or upon the end of the Term if there remains any uncured default of which Tenant shall have received notice, Landlord at its sole option may draw down all or a part of the Letter of Credit. The balance of any Letter of Credit cash proceeds shall be held in accordance with Section 7.5 below. Should the entire Letter of Credit, or any portion thereof, be drawn down by Landlord, Tenant shall, upon the written demand of Landlord, deliver a replacement Letter of Credit in the amount drawn, and Tenant's failure to do so within ten (10) days after receipt of such written demand shall constitute an additional Event of Default hereunder. The application of all or any part of the cash proceeds of the Letter of Credit to any obligation or default of Tenant under this Lease shall not deprive Landlord of any other rights or remedies Landlord may have nor shall such application by Landlord constitute a waiver by Landlord.

7.3. Transfer of Letter of Credit. In the event that Landlord transfers its interest in the Premises, Tenant shall upon notice from and at no cost to Landlord, deliver to Landlord an amendment to the Letter of Credit or a replacement Letter of Credit naming Landlord's successor as the beneficiary thereof. If Tenant fails to deliver such amendment or replacement within ten (10) business days after written notice from Landlord, Landlord shall have the right to draw down the entire amount of the Letter of Credit and hold the proceeds thereof in accordance with Section 7.5 below.

7.4. Credit of Issuer of Letter of Credit. The "**Minimum Rating Agency Threshold**" shall mean that the issuing bank has outstanding unsecured, uninsured and unguaranteed senior long-term indebtedness that is then rated (without regard to qualification of such rating by symbols such as "+" or "-" or numerical notation) "Baa" or better by Moody's Investors Service, Inc. and/or "BBB" or better by Standard & Poor's Rating Services, or a comparable rating by a comparable national rating agency designated by Landlord in its discretion. The "**Minimum Capital Threshold**" shall mean that the issuing bank has combined capital, surplus and undivided profits of not less than $10,000,000,000. If the issuer of the Letter of Credit fails to satisfy either or both of the Minimum Rating Agency Threshold or the Minimum Capital Threshold, Tenant shall be required to deliver a substitute letter of credit from another issuer reasonably satisfactory to the Landlord and that satisfies both the Minimum Rating Agency Threshold and the Minimum Capital Threshold not later than fifteen (15) business days after Landlord notifies Tenant of such failure.

7.5. Security Deposit. Landlord shall hold the balance of proceeds remaining after a draw on the Letter of Credit (hereinafter referred to as the "**Security Deposit**") as security for

Tenant's performance of all its Lease obligations. After an Event of Default, or upon the end of the Term if there remains any uncured default of which Tenant shall have received notice, Landlord may apply the Security Deposit, or any part thereof, to Landlord's damages without prejudice to any other Landlord remedy. Should Landlord apply all or any portion of the Security Deposit in accordance with the terms of this Lease, Tenant shall, upon the written demand of Landlord, deliver cash in the amount applied, and Tenant's failure to do so within twenty (20) days after receipt of such written demand shall constitute an additional Event of Default hereunder without further notice or opportunity to cure. Tenant shall have the right to deliver a replacement Letter of Credit in the form and amount required hereunder, and upon receipt of such replacement Letter of Credit, Landlord shall return the Security Deposit to Tenant. Landlord has no obligation to pay interest on the Security Deposit and may co-mingle the Security Deposit with Landlord's funds. If Landlord conveys its interest under this Lease, the Security Deposit, or any part not applied previously, may be turned over to the grantee in which case Tenant shall look solely to the grantee for the proper application and return of the Security Deposit.

7.6. Return of Security Deposit or Letter of Credit. Should Tenant comply with all of such terms, covenants and conditions and promptly pay all sums payable by Tenant to Landlord hereunder, the Security Deposit and/or Letter of Credit or the remaining proceeds therefrom, as applicable, shall be returned to Tenant within sixty (60) days after the end of the Term, less any portion thereof which may have been utilized by Landlord to cure any default or applied to any actual damage suffered by Landlord.

8. WAIVER OF LANDLORD'S LIEN.

Landlord hereby waives and disclaims all statutory and contractual lien rights in Tenant's furniture, fixtures, trade fixtures, equipment, merchandise, and other property now or hereafter placed at the Premises except (a) any real estate fixtures within the Premises, (b) any item paid by Landlord, and (c) any item that must remain in the Premises upon surrender pursuant to Section 21.1 below. Landlord hereby agrees to execute a waiver and agreement in Landlord's standard commercially reasonable form for the benefit of any national banking association or institutional lender of Tenant. It is understood and agreed by Tenant that the foregoing provisions shall not affect the prohibition set forth in Section 25.12 below.

9. UTILITIES, HVAC; WASTE REMOVAL

9.1. Electricity. Commencing on the Phase 1 Term Commencement Date, Tenant shall pay all charges for electricity furnished to the Premises and/or any equipment exclusively serving the Premises as additional rent, based on Landlord's reasonable estimates and/or any applicable metering equipment. At Tenant's request, Landlord shall provide Tenant with reasonable back-up documentation regarding the total charges and the method of allocating the charges to Tenant. As part of Tenant's Fitout, Landlord shall install in or near the Premises metering equipment to measure electricity furnished to all or any portion of the Premises. Tenant shall make any deposit (including but not limited to, such letters of credit) as the electric company or provider shall require. Tenant shall, at Tenant's sole cost and expense, maintain and keep in good order, condition and repair any such metering equipment. Tenant shall pay the full amount of any charges attributable to such meter on or before the due date therefor either to Landlord or directly to the supplier thereof, at Landlord's election.

9.2. Water. Commencing on the applicable Term Commencement Date, Tenant shall pay all water and sewer charges for water furnished to the Premises and/or any equipment exclusively serving the Premises as additional rent. Such charges shall be reasonably estimated by Landlord based on the percentage of air flow used by Tenant (measured through Landlord's Building energy management system).

9.3. Gas. Landlord shall provide natural gas service capacity for base Building systems and Tenant's use in the Premises (as set forth on the Matrix attached to the Work Letter) at all times during the Term. Tenant shall, at Tenant's expense, furnish and install in a location approved by Landlord in or near the Premises such necessary metering equipment approved by Landlord to measure gas furnished to the Premises and any equipment exclusively serving the same. Tenant, at Tenant's expense, shall maintain and keep in good repair and condition such gas meter equipment. Commencing on the applicable Term Commencement Date. Tenant shall pay the full amount of any charges attributable to such meter(s) on or before the due date therefor directly to the supplier thereof.

9.4. HVAC.

(a) General. Consistent with the levels provided by Class A general office and laboratory/office buildings in Kendall Square and as further described in the Matrix, Landlord shall provide to the Common Areas and the Premises on a twenty-four (24) hours per day, seven (7) days per week basis (i) heat 365 days/year, and (ii) air conditioning during the normal cooling season (provided, however, that Landlord will use commercially reasonable efforts to provide air conditioning outside the normal cooling season as reasonably requested by Tenant), and (iii) general exhaust/ventilation. It is expressly acknowledged and agreed that Tenant shall be solely responsible for (A) cooling any data center, server rooms and any other similar areas located in the Premises beyond the standard level of cooling provided, and (B) specialty exhaust, including without limitation exhaust for H2 rooms, vivarium, chemical storage rooms which require Class I, Division II classification, if any, and any other special rooms or special Tenant equipment. All costs incurred by Landlord to provide HVAC service to the Premises shall be reimbursed by Tenant to Landlord as additional rent. Such costs shall include the cost of all utility services used in the operation of the HVAC system(s) providing HVAC service to the Premises and all costs incurred by Landlord in the operation, maintenance, and repair of such system(s). Landlord shall allocate to the Premises a portion of the total amount of such costs incurred with respect to the Building based upon the cubic footage of heated, chilled, and fresh air distributed in the Premises as indicated by the energy management system serving the Building as a percentage of the aggregate cubic footage of heated, chilled, and fresh air distributed in the entire Building for the applicable period. Tenant shall pay such costs monthly, together with monthly installments of Base Rent, on an estimated basis in amounts from time to time reasonably determined by Landlord. From time to time, and at least annually, Landlord shall deliver to Tenant a reasonably detailed statement of the actual amount of such costs for the period of time since the prior statement, together with a statement of the amounts paid by Tenant on an estimated basis toward such costs as aforesaid. If such statement indicates that the estimated amounts paid by Tenant are less than Tenant's allocable share of the actual amount of

such costs for such period of time, then Tenant shall pay the amount of such shortfall to Landlord within thirty (30) days after delivery of such statement. If such statement indicates that Tenant's estimated payments for such period of time exceed the actual amount of such costs for such year, then Landlord shall credit the excess against the next due installment(s) of additional rent payable under this Section 9.4. Whenever the air conditioning systems are in operation, Tenant agrees to use reasonable efforts to lower and close the blinds or drapes when necessary because of the sun's position, and to cooperate fully with Landlord with regard to, and to abide by all the reasonable regulations and requirements which Landlord may prescribe for the proper functioning and protection of the air conditioning systems.

(b) Additional Requirements. In the event Tenant requires additional air conditioning other than as specified in the Matrix for (i) meeting rooms or server rooms, (ii) laboratory and research and development uses or (iii) any other reason, then any additional air conditioning units, chillers, condensers, compressors, ducts, piping and other equipment may be installed by Landlord or, at Landlord's election, by Tenant with Landlord's supervision, in either case at Tenant's sole cost and expense, but only if, in Landlord's reasonable judgment, the same will not (A) cause damage or injury to the Building, (B) create a dangerous or hazardous condition, (C) unreasonably or materially interfere with or disturb other tenants, nor (D) entail excessive or unreasonable alterations or repairs. Tenant shall reimburse Landlord, as additional rent hereunder, for the cost incurred by Landlord in installing, maintaining and operating such additional air conditioning equipment and the charges for all utilities consumed thereby.

9.5. Other Utilities; Utility Information. Subject to Landlord's reasonable rules and regulations governing the same, Tenant shall obtain and pay, as and when due, for all other utilities and services consumed in and/or furnished to the Premises, together with all taxes, penalties, surcharges and maintenance charges pertaining thereto. Within ten (10) business days after Landlord's request from time to time, Tenant shall provide Landlord with reasonably detailed information regarding Tenant's utility usage in the Premises.

9.6. Interruption or Curtailment of Utilities.

(a) When necessary by reason of accident or emergency, or for repairs, alterations, replacements or improvements which in the reasonable judgment of Landlord are desirable or necessary to be made, Landlord reserves the right, upon no less than five (5) business days' notice except in the event of an emergency, to interrupt, curtail, or stop (i) the furnishing of heat, air conditioning, ventilation and/or hot or cold water, and (ii) the operation of the life safety, plumbing and/or electric systems. With respect to any planned interruption, Landlord shall consult with Tenant to schedule such interruption in an effort to minimize interference with Tenant's business operations. Landlord shall exercise reasonable diligence to eliminate the cause of any such interruption, curtailment, stoppage or suspension, but, subject to Section 9.6 below, there shall be no diminution or abatement of Rent or other compensation due from Landlord to Tenant hereunder, nor shall this Lease be affected or any of Tenant's obligations hereunder reduced, and Landlord shall have no responsibility or liability for any such interruption, curtailment, stoppage, or suspension of services or systems.

(b) Notwithstanding anything to the contrary in this Lease contained, if the Premises or a material portion of the Premises is made untenantable as a direct result of

Landlord's failure to provide any service which Landlord is required to provide hereunder (a "**Material Services Failure**") such that, for the duration of the Landlord Service Interruption Cure Period (hereinafter defined), the continued operation in the ordinary course of Tenant's business in any portion of the Premises is materially and adversely affected, then, provided that Tenant does not use the Premises, or the untenantable portion of the Premises, as the case may be (the "**Affected Portion**"), during the entirety of the Landlord Service Interruption Cure Period and that such untenantability and Landlord's inability to cure such condition is not caused by the acts or omissions of any of the Tenant Parties, Base Rent shall thereafter be abated in proportion to such untenantability until the day such service is restored. For purposes hereof, the "**Landlord Service Interruption Cure Period**" shall be defined as the six (6) consecutive business days after Landlord's receipt of written notice from Tenant of the condition causing untenantability in the Affected Portion (the "**Interruption Notice**"). The remedy set forth in this Section 9.6(b) shall be Tenant's sole and exclusive remedy on account of an interruption of services or Landlord default resulting in an interruption of services other than Tenant's right to obtain affirmative injunctive relief. The provisions of this Section 9.6(b) shall not apply in the event of Casualty or Taking (which shall be governed by Article 15 below) or in the event of untenantability caused by Landlord's Force Majeure or if Landlord is unable to cure such condition as the result of causes beyond Landlord's control.

9.7. Telecommunications Providers. Notwithstanding anything to the contrary herein or in this Lease contained, Landlord has no obligation to allow any particular telecommunications service provider to have access to the Building or to Premises other than Verizon, Level 3 and Comcast (collectively, the "**Approved Providers**"). If Landlord determines there is available space and permits such access, Landlord may condition such access upon (a) the execution of Landlord's standard telecommunications agreement (which shall include a provision requiring the payment of fair market rent for any space in the Property dedicated, licensed and/or leased to such provider), and (b) the payment to Landlord by Tenant or the service provider of any costs incurred by Landlord in facilitating such access. Subject to the preceding sentence, Landlord's consent to providing access to the Building to any service provider other than the Approved Providers shall not be unreasonably withheld, conditioned or delayed provided such access does not require any street opening permits or approvals (unless otherwise agreed to by the City of Cambridge) or would unreasonably interfere with the use of the Common Areas.

9.8. Landlord's Services. Subject to reimbursement pursuant to Section 5.2 above, and subject further to Landlord's Force Majeure, Landlord shall provide the services described in Exhibit 8 attached hereto and made a part hereof ("**Landlord's Services**"). All costs incurred in connection with the provision of Landlord's Sen ices shall be included in Operating Costs.

10. MAINTENANCE AND REPAIRS

10.1. Maintenance and Repairs by Tenant. Tenant shall keep the Premises (including, without limitation, all electronic, phone and data cabling and related equipment installed for the exclusive benefit of Tenant (other than building service equipment), fixtures, lighting, electrical equipment and wiring, non- structural walls, interior windows, floor coverings, doors and door frames and plate glass (provided that Landlord shall have the right to repair plate glass at Tenant's cost)) neat and clean and free of insects, rodents, vermin and other

pests and Trash and in such good repair, order and condition as the same are in on the applicable Term Commencement Date or in such better condition as the Premises may be put in during the Term, reasonable wear and tear and damage by insured Casualty excepted. Tenant shall be solely responsible, at Tenant's sole cost and expense, for the proper maintenance of all building systems, sanitary, electrical, heating, air conditioning, plumbing, security or other systems and of all equipment and appliances to the extent installed and/or operated by Tenant and/or exclusively serving the Premises (provided that Landlord shall have the right to repair the same at Tenant's cost). Tenant agrees to provide regular maintenance by contract with a reputable qualified service contractor for the heating and air conditioning, electrical, plumbing and life-safety equipment servicing the Premises. Such maintenance contract and contractor shall be subject to Landlord's reasonable approval. Tenant, at Landlord's request, shall at reasonable intervals provide Landlord with copies of such contracts and maintenance and repair records and/or reports.

10.2. Maintenance and Repairs by Landlord. Except as otherwise provided in Article 15, and subject to Tenant's obligations in Section 10.1 above, Landlord shall maintain the roof, Building structure (including without limitation the foundation, structural floor slabs and columns) and Building core (including without limitation the restroom facilities), exterior window frames, and except to the extent exclusively serving the Premises (or any other leasable space in the Building), the base building systems and equipment (including without limitation sanitary, electrical, heating, air conditioning, plumbing and security systems) in reasonable repair, order and condition and in compliance with Legal Requirements. In addition, Landlord shall operate and maintain the Common Areas in compliance with Legal Requirements and otherwise in substantially the same manner as comparable combination office and laboratory facilities in the Kendall Square area. All costs incurred by Landlord under this Section 10.2 shall be included in Operating Costs as provided in Section 5.2.

10.3. Accidents to Sanitary and Other Systems. Tenant shall give to Landlord prompt notice of any fire or accident in the Premises or in the Building and of any damage to, or defective condition in, any part or appurtenance of the Building including, without limitation, the sanitary, electrical, ventilation, heating and air conditioning or other systems located in, or passing through, the Premises. Except as otherwise provided in Article 15, and subject to Tenant's obligations in Section 10.1 above, such damage or defective condition shall be remedied by Landlord with reasonable diligence, but, subject to Section 14.5 below, if such damage or defective condition w as caused by any of the Tenant Parties, the cost to remedy the same shall be paid by Tenant.

10.4. Floor Load—Heavy Equipment. Tenant shall not place a load upon any floor of the Premises exceeding the floor load per square foot of area which such floor was designed to carry and which is allowed by Legal Requirements. Landlord reserves the right to prescribe the weight and position of all safes, heavy machinery, heavy equipment, freight, bulky matter or fixtures (collectively, "**Heavy Equipment**"), which shall be placed so as to distribute the weight. Heavy Equipment shall be placed and maintained by Tenant at Tenant's expense in settings sufficient in Landlord's reasonable judgment to absorb and prevent vibration, noise and annoyance. Tenant shall not move any Heavy Equipment into or out of the Building without giving Landlord prior written notice thereof and observing all of Landlord's Rules and Regulations with respect to the same. If such Heavy Equipment requires special handling, Tenant

agrees to employ only persons holding a Master Rigger's License to do said work, and that all work in connection therewith shall comply with Legal Requirements. Any such moving shall be at the sole risk and hazard of Tenant and Tenant will defend, indemnify and save Landlord, Fee Owner and their respective agents (including without limitation its property manager), contractors and employees (collectively with Landlord, the "**Landlord Parties**") harmless from and against any and all claims, damages, judgments, losses, penalties, costs, expenses and fees (including without limitation reasonable legal fees) (collectively, "**Claims**") resulting directly or indirectly from such moving. Proper placement of all Heavy Equipment in the Premises shall be Tenant's responsibility.

10.5. Premises Cleaning. Tenant shall be responsible, at its sole cost and expense, for janitorial and trash removal services and other biohazard disposal services for the Premises, including the laboratory areas thereof. Such services shall be performed by licensed (where required by law or governmental regulation), insured and qualified contractors approved in advance, in writing, by Landlord (which approval shall not be unreasonably withheld, delayed or conditioned) and on a sufficient basis to ensure that the Premises are at all times kept neat and clean.

10.6. Pest Control. Tenant, at Tenant's sole cost and expense, shall cause the Premises to be exterminated on a regular basis to Landlord's reasonable satisfaction and shall cause all portions of the Premises used for the storage, preparation, service or consumption of food or beverages to be cleaned daily in a manner reasonably satisfactory to Landlord, and to be treated against infestation by insects, rodents and other vermin and pests whenever there is evidence of any infestation. Tenant shall not permit any person to enter the Premises for the purpose of providing such extermination services, unless such persons have been approved by Landlord. If requested by Landlord, Tenant shall, at Tenant's sole cost and expense, store any refuse generated in the Premises by the consumption of food or beverages in a cold box or similar facility.

11. ALTERATIONS AND IMPROVEMENTS BY TENANT

11.1. Landlord's Consent Required.

(a) Tenant shall not make any alterations, decorations, installations, removals, additions or improvements (collectively, "**Alterations**") in or to the Premises without Landlord's prior written approval of the contractor(s), written plans and specifications, a time schedule therefor and the items listed in Exhibit 9 attached hereto and made a part hereof. Landlord reserves the right to require that Tenant use Landlord's preferred vendor(s) for any Alterations that involve roof penetrations, alarm tie-ins, sprinklers, fire alarm and other life safety equipment. Tenant shall not make any amendments or additions to plans and specifications approved by Landlord without Landlord's prior written consent. Tenant shall be responsible for all elements of the design of Tenant's plans (including, without limitation, compliance with Legal Requirements, functionality of design, the structural integrity of the design, the configuration of the Premises and the placement of Tenant's furniture, appliances and equipment), and Landlord's approval of Tenant's plans shall in no event relieve Tenant of the responsibility for such design. In seeking Landlord's approval, Tenant shall provide Landlord, at least ten (10) business days in advance of any proposed construction, with plans, specifications,

bid proposals, certified stamped engineering drawings and calculations by Tenant's engineer of record or architect of record (including connections to the Building's structural system, modifications to the Building's envelope, non-structural penetrations in slabs or walls, and modifications or tie-ins to life safety systems), code compliance certifications, work contracts, requests for laydown areas and such other information concerning the nature and cost of the Alterations as Landlord may reasonably request. Landlord shall have no liability or responsibility for any claim, injury or damage alleged to have been caused by the particular materials (whether building standard or non-building standard), appliances or equipment selected by Tenant in connection with any work performed by or on behalf of Tenant.

(b) Subject to Sections 11.1(c) and (d) below, Landlord's approval of non- structural Alterations shall not be unreasonably withheld, conditioned or delayed.

(c) Notwithstanding the foregoing, Landlord may withhold its consent in its sole discretion (a) to any Alteration to or affecting the roof and/or building systems (provided that Landlord shall not unreasonably withhold its consent with respect to the installation of Tenant's Rooftop Equipment in accordance with Section 1.4(d) above), (b) with respect to matters of aesthetics relating to Alterations to or affecting the exterior of the Building, (c) to any Alteration affecting the Building structure, (d) to any Alteration to or affecting any of the fume hoods if such Alteration would, in Landlord's reasonable discretion, materially adversely affect the marketability or value of the Premises; provided, however, if Tenant (i) agrees to restore the fume hoods to their condition prior to such Alteration (which may include re-installing any fume hoods that are removed) prior to the end of the Term, and (ii) posts such security reasonably required by Landlord to secure Tenant's obligation to perform such restoration, then Landlord shall not unreasonably withhold its consent to such Alterations to the fume hoods, and (e) to any Alteration enlarging the rentable square footage of the Premises (collectively, "**Restricted Alterations**").

(d) Notwithstanding the foregoing, Landlord's consent shall not be required (but the applicable Exhibit 9 items shall be provided if reasonably required by Landlord) with respect to any Alterations that are purely decorative in nature nor with respect to non-structural Alterations that are not Restricted Alterations and which cost less than $100,000 in any one instance (and $300,000 in the aggregate per calendar year, prorated for any partial calendar year) so long as any such Alterations are consistent with the quality and character of the Building, are in compliance with Legal Requirements and do not (i) affect, and do not require access to, any part of the Building outside the Premises; nor (ii) trigger any Legal Requirement to perform work outside the Premises (each, a "**Permitted Alteration**"), provided Tenant shall provide Landlord with reasonably detailed written notice thereof.

(e) Except as otherwise expressly set forth herein, all Alterations shall be done at Tenant's sole cost and expense and at such times and in such manner as Landlord may from time to time reasonably designate.

(f) If Tenant shall make any specialized Alterations (including without limitation interstitial stairs and Alterations that are more costly to remove than standard lab/office alterations), then Landlord may elect to require Tenant at the expiration or sooner termination of the Term to restore the Premises to substantially the same condition as existed

immediately prior to such Alterations (if Tenant requests, at the time it requests Landlord's approval, that Landlord make such election at the time of its approval thereof, Landlord shall be required to make such election, if at all, at such time; or in the case of Permitted Alterations, within thirty (30) days after receipt of request for Landlord to make such election, together with reasonably detailed notice regarding the Permitted Alterations in question). Notwithstanding the foregoing, Landlord shall have the right, by written notice to Tenant at least sixty (60) days prior to the expiration of the Term (or within five (5) business days after any earlier termination) to waive the requirement to restore any specialized Alteration.

(g) Tenant shall provide Landlord with reproducible record drawings (in CAD format) of all Alterations within sixty (60) days after completion thereof.

11.2. Supervised Work. Landlord and Tenant recognize that to the extent Landlord permits Tenant to perform any Alterations outside the Premises and/or affecting the Building systems, or if required by Legal Requirements, Landlord may need to make arrangements to have supervisory personnel on site. Accordingly, Landlord and Tenant agree as follows: Tenant shall give Landlord at least two (2) business days' prior written notice of any proposed Alterations outside the Premises and/or affecting the Building systems (the "**Supervised Work**"). Tenant shall reimburse Landlord, within thirty (30) days after demand therefor, for the reasonable cost of Landlord's supervisory personnel overseeing the Supervised Work.

11.3. Harmonious Relations. Tenant agrees that it will not, either directly or indirectly, use any contractors and/or materials if their use will create any difficulty, whether in the nature of a labor dispute or otherwise, with other contractors and/or labor engaged by Tenant or Landlord or others in the construction, maintenance and/or operation of the Property or any part thereof. In the event of any such difficulty, upon Landlord's request, Tenant shall cause all contractors, mechanics or laborers causing such difficulty to leave the Property immediately.

11.4. Liens. No Alterations shall be undertaken by Tenant until Tenant has made provision for written waiver of liens from all contractors for such Alteration and taken other appropriate protective measures approved and/or required by Landlord. If the cost of any such Alteration exceeds $100,000, then Tenant shall either: (a) demonstrate to Landlord, to Landlord's reasonable satisfaction, that Tenant is able to pay for the cost of such Alteration, or (b) procure appropriate surety payment and performance bonds naming Landlord as an additional obligee and file lien bond(s) (in jurisdictions where available) on behalf of such contractors. Any mechanic's hen filed against the Premises or the Building for work claimed to have been done for, or materials claimed to have been furnished to, Tenant shall be discharged by Tenant within ten (10) days thereafter, at Tenant's expense by filing the bond required by law or otherwise.

11.5. General Requirements. Unless Landlord and Tenant otherwise agree in writing, Tenant shall (a) obtain Landlord's written approval of any and all building permit applications relating to Alterations to the Premises prior to submission thereof; (b) procure or cause others to procure on its behalf all necessary permits before undertaking any Alterations in the Premises (and provide copies thereof to Landlord); (c) perform all of such Alterations in a good and workmanlike manner, employing materials of good quality and in compliance with Landlord's construction rules and regulations, all insurance requirements of this Lease, and Legal Requirements; and (d) defend, indemnify and hold the Landlord Parties harmless from and

against any and all Claims occasioned by or growing out of such Alterations. Tenant shall cause contractors employed by Tenant to (i) carry the insurance specified in Exhibit 9A, and (ii) submit certificates evidencing such coverage to Landlord prior to the commencement of any such Alterations. In addition, if construction during normal business hours unreasonably disturbs other tenants of the Property, in Landlord's sole discretion, Landlord may require Tenant to stop the performance of Alterations during normal business hours and to perform the same after hours. If Landlord reasonably determines that, in connection with Alterations by Tenant, (A) any base Building system (including without limitation the fire alarm system) should be or is required to be shut down, and/or (B) base Building mechanical system filters be changed pre- or post-construction, Tenant shall reimburse Landlord for the reasonable out-of-pocket costs incurred by Landlord in connection therewith.

12. SIGNAGE

12.1. Restrictions. Tenant shall have the right to install Building standard signage identifying Tenant's business at the entrance to each floor of the Premises, which signage shall be (a) at Tenant's sole cost and expense, and (b) subject to Landlord's prior written consent (which consent shall not be unreasonably withheld, conditioned or delayed). Except for interior signage at the entrance to the Premises as permitted in the preceding sentence, Tenant shall not place or suffer to be placed or maintained on the exterior of the Premises, or any part of the interior visible from the exterior thereof, any sign, banner, advertising matter or any other thing of any kind (including, without limitation, any hand-lettered advertising), and shall not place or maintain any decoration, letter or advertising matter on the glass of any window or door of the Premises without first obtaining Landlord's written approval. No signs or blinds may be put on or in any window or elsewhere if visible from the exterior of the Building. Landlord shall provide building standard blinds for each window within the Premises and the same shall be installed as part of Tenant's Fitout. Tenant may not remove the building standard blinds without Landlord's prior written consent. Tenant may hang its own drapes, provided that they shall not in any way interfere with any building standard drapery or blinds provided by Landlord or be visible from the exterior of the Building, and that such drapes are so hung and installed that, when drawn, the building standard drapery or blinds are automatically also drawn.

12.2. Building Directory. Landlord shall list Tenant within the directory in the Building lobby at Landlord's sole cost and expense. Subject to reasonable limits on the number of lines on the directory Landlord can provide and all such additional signage in the lobby directory, Landlord shall, at Tenant's sole cost and expense, add the names of any approved subtenants or licensees occupying any portion of the Premises.

13. ASSIGNMENT. MORTGAGING AND SUBLETTING

13.1. Landlord's Consent Required. Tenant shall not, without Landlord's prior written consent, which consent may be withheld in Landlord's sole discretion, mortgage or otherwise encumber this Lease or the Premises in whole or in part. Except as expressly otherwise set forth in Section 13.4 below, Tenant shall not, without Landlord's prior written consent (which shall be granted or withheld in accordance with Section 13.3 below), assign, sublet, license or transfer this Lease or the Premises in whole or in part whether by changes in the ownership or control of Tenant, or any direct or indirect owner of Tenant, whether at one time or

at intervals, by sale or transfer of stock, partnership or beneficial interests, operation of law or otherwise, or permit the occupancy of all or any portion of the Premises by any person or entity other than Tenant's employees (each of the foregoing, a "**Transfer**"). Any purported Transfer made without Landlord's consent, if required hereunder, shall be void and confer no rights upon any third person, provided that if there is a Transfer, Landlord may collect rent from the transferee without waiving the prohibition against Transfers, accepting the transferee, or releasing Tenant from full performance under this Lease (but such rent shall be applied as a credit against Tenant's Rent obligations hereunder). In the event of any Transfer in violation of this Article 13, Landlord shall have the right to terminate this Lease upon thirty (30) days' written notice to Tenant given within sixty (60) days after receipt of written notice from Tenant to Landlord of any Transfer, or within one (1) year after Landlord first learns of the Transfer if no notice is given.

13.2. Landlord's Recapture Right.

(a) Subject to Section 13.4 below, Tenant shall, prior to offering or advertising the Premises or any portion thereof for a Transfer for the balance of the Term or accepting an offer for a Transfer for the balance of the Term, give a written notice (the "**Recapture Notice**") to Landlord which: (i) states that Tenant desires to make a Transfer, (ii) identifies the affected portion of the Premises (the "**Recapture Premises**"), (iii) identifies the period of time (the "**Recapture Period**") during which Tenant proposes to sublet the Recapture Premises, or indicates that Tenant proposes to assign its interest in this Lease, and (iv) offers to Landlord to terminate this Lease with respect to the Recapture Premises (in the case of a proposed assignment of Tenant's interest in this Lease or a subletting for the remainder of the term of this Lease) or to suspend the Term for the Recapture Period (i.e. the Term with respect to the Recapture Premises shall be terminated during the Recapture Period and Tenant's rental obligations shall be proportionately reduced). Landlord shall have fifteen (15) business days within which to respond to the Recapture Notice.

(b) If Tenant does not enter into a Transfer on the terms and conditions contained in the Recapture Notice on or before the date which is nine (9) months after the earlier of (x) the expiration of the 15-business day period specified in Section 13.2(a) above, or (y) the date that Landlord notifies Tenant that Landlord will not accept Tenant's offer contained in the Recapture Notice, time being of the essence, then prior to entering into any Transfer after such 9-month period, Tenant must deliver to Landlord a new Recapture Notice in accordance with Section 13.2(a) above.

(c) Notwithstanding anything to the contrary contained herein, if Landlord notifies Tenant that it accepts the offer contained in any Recapture Notice, Tenant shall have the right, for a period of ten (10) days following receipt of such notice of acceptance from Landlord, time being of the essence, to notify Landlord in writing that it wishes to withdraw such offer. Upon delivery to Landlord of such withdrawal notice, Landlord's acceptance of the offer in the applicable Recapture Notice shall be of no further force and effect, Tenant shall not thereafter offer or accept an offer for a Transfer (other than as described in Section 13.4 below) without sending another Recapture Notice to Landlord, and this Lease shall continue in full force and effect.

13.3. Standard of Consent to Transfer. Subject to Landlord's rights set forth in Section 13.2 to terminate the Lease or suspend the Term, Landlord agrees that, subject to the provisions of this Article 13. Landlord shall not unreasonably withhold, condition or delay its consent to a Transfer. It shall be reasonable for Landlord to withhold its consent to a Transfer, inter aha, (a) if the Transferee will not use the Premises for the Permitted Uses; (b) if, in Landlord's reasonable opinion, the Transferee (i) does not have a tangible net worth and other financial indicators sufficient to meet the Transferee's obligations under the Transfer instrument in question; (ii) does not have a business reputation compatible with the operation of a first-class combination laboratory, research, development and office building; and/or (c) intends to use the space subject to the Transfer for a use that violates any exclusive or restrictive use provisions then in effect with respect to space in the Property.

13.4. Permitted Transfers.

(a) Affiliates and Successors. Notwithstanding the foregoing provisions of this Article 13, Tenant shall have the right, subject to Section 13.7 below, without giving Landlord a Recapture Notice and without obtaining Landlord's consent, but with prior written notice to Landlord (unless contractually prohibited from doing so, in which event such notice shall be provided within ten (10) days after the effective date thereof), to (A) make a Transfer to an Affiliate so long as such entity remains in such relationship to Tenant, and (B) assign the Lease to a Successor, provided that prior to or simultaneously with any assignment pursuant to this Section 13.4, such Affiliate or Successor, as the case may be, and Tenant execute and deliver to Landlord an assignment and assumption agreement in form and substance reasonably acceptable to Landlord whereby such Affiliate or Successor, as the case may be, shall agree to be independently bound by and upon all the covenants, agreements, terms, provisions and conditions set forth in the Lease on the part of Tenant to be performed, and whereby such Affiliate or Successor, as the case may be, shall expressly agree that the provisions of this Article 13 shall, notwithstanding such Transfer, continue to be binding upon it with respect to all future Transfers. For the purposes hereof, an "**Affiliate**" shall be defined as any entity that is controlled by, is under common control with, or which controls Tenant. As used herein, "control" means direct or, either together with others acting as a group or otherwise, indirect ownership or possession of the right or power, by vote of stockholders or directors, or by contract, agreement or other arrangements, or otherwise, to direct, determine, prevent or otherwise dictate managerial, operational or other actions or activities of any such person, firm or corporation. For the purposes hereof, a "**Successor**" shall mean any entity into or with which Tenant is merged or with which Tenant is consolidated or which acquires all or substantially all of Tenant's stock or assets, provided that the surviving entity shall have a tangible net worth (i.e., the excess of total assets, less intangible assets, over total liabilities, as evidenced by either (1) publicly available annual report(s) or SEC or other public filings, or (2) audited financial statements (or, with respect to newly created entities, pro-forma statements) prepared in accordance with GAAP delivered to Landlord) at least equal to Tenant's tangible net worth immediately prior to the Transfer.

(b) Working Partnerships. Notwithstanding any provision to the contrary in this Lease, occupancy of less than fifteen thousand (15,000) rentable square feet of the Premises by companies, firms or other entities (each, a "**Working Partnership**") (i) who are members of a group with whom Tenant has a contractual or other relationship providing for cooperative or

collaborative research or development work, who are or typically would be located by Tenant in one of its facilities, and/or (ii) in which Tenant has a beneficial interest and which are actively engaged in research activities using technology, techniques and/or equipment developed by or in collaboration with Tenant, shall not be a Transfer for the purposes of this Article 13 and shall be permitted without the necessity of obtaining Landlord's consent thereto (and Tenant shall not be obligated to give Landlord a Recapture Notice with respect thereto), but Tenant shall provide Landlord with prior written notice thereof (which notice shall include the number of square feet in occupancy by such entities and such other information reasonably required for financing, insurance and other risk management purposes, but which notice may otherwise be limited in detail to the extent required by applicable confidentiality agreements).

(c) Notwithstanding the provisions of this Section 13.4. no transaction or series of transactions which are effected solely for the purpose of qualifying as a transaction which does not require Landlord's consent (i.e. and thereby avoiding the operation of the provisions of this Article 13) shall be permitted pursuant to this Section 13.4.

13.5. Listing Confers no Rights. The listing of any name other than that of Tenant, whether on the doors of the Premises or on the Building directory, or otherwise, shall not operate to vest in any such other person, firm or corporation any right or interest in this Lease or in the Premises or be deemed to effect or evidence any consent of Landlord, it being expressly understood that any such listing is a privilege extended by Landlord revocable at will by written notice to Tenant.

13.6. Profits In Connection with Transfers. Tenant shall, within thirty (30) days of receipt thereof, pay to Landlord fifty percent (50%) of any rent, sum or other consideration to be paid or given in connection with any Transfer, either initially or over time, in excess of Rent hereunder as if such amount were originally called for by the terms of this Lease as additional rent, after deducting: the reasonable actual out-of-pocket legal, and brokerage expenses incurred by Tenant; and the cost of improvements paid for by Tenant in connection with such Transfer.

13.7. Prohibited Transfers. Notwithstanding any contrary provision of this Lease, Tenant shall have no right to make a Transfer unless on both (i) the date on which Tenant notifies Landlord of its intention to enter into a Transfer and (ii) the date on which such Transfer is to take effect, there is no Monetary Default nor any uncured Event of Default by Tenant under this Lease. Notwithstanding anything to the contrary contained herein, Tenant agrees that in no event shall Tenant make a Transfer (a) to any government agency; (b) to any entity with whom Landlord shall have negotiated for space in the Property in the six (6) months immediately preceding such proposed Transfer as evidenced by an exchange of written proposals), provided Landlord has comparable space in the Laboratory Addition to offer the prospective occupant for a comparable term; or (c) if any part of the rent payable under such Transfer instrument shall be based in whole or in part on the income or profits derived from the Premises.

13.8. Restrictions on Subleases. In addition to the other requirements set forth in this Lease and notwithstanding any other provision of this Lease, subleases or licenses of less than an entire floor of the Premises shall only be permitted under the following terms and conditions: (a) the layout of both the subleased premises and the remainder of the Premises must comply with Legal Requirements and be approved by Landlord (acting reasonably), including, without

limitation, all requirements concerning access and egress and any modifications necessary to have the Premises function as a multi-tenant space rather than as a single tenant space; and (b) each subleased premises shall be separately physically demised from the remainder of the Premises, and Tenant shall pay all costs thereof. There shall be no more than two (2) subleases on any single floor, and no more than four (4) subleases in the aggregate, in effect in the Premises at any given time.

13.9. No Release. No Transfer shall relieve Tenant of its primary obligation as party Tenant hereunder, nor shall it reduce or increase Landlord's obligations under this Lease.

13.10. Investment Policies. Notwithstanding anything to the contrary contained herein, Tenant may not enter into any Transfer with any person or entity if the identity of such person or entity is inconsistent with the written investment policies of Landlord and/or Landlord's parent (as the same may change from time to time) as provided to Tenant by Landlord prior to Landlord's receipt of Tenant's notice of such proposed Transfer, and any such Transfer shall be void ab initio. The provisions of this Section 13.9 shall apply to all Transferees, including without limitation, Affiliates and Successors. Notwithstanding the foregoing, the provisions of this Section 13.9 shall be of no further force and effect if Landlord and/or Fee Owner are no longer affiliates of Massachusetts Institute of Technology.

14. INSURANCE: INDEMNIFICATION: EXCULPATION

14.1. Tenant's Insurance.

(a) Tenant shall procure, pay for and keep in force on a primary and non-contributory basis throughout the Term (and for so long thereafter as Tenant remains in occupancy of the Premises) commercial general liability insurance insuring Tenant on an occurrence basis against all claims and demands for bodily injury (including, without limitation, sickness, disease, and death), damage to property (including products liability coverage (to the extent Tenant has products in clinical trials, or commercial products or otherwise) and completed operations and contractual liability coverage) (it being understood and agreed that either (i) such commercial general liability insurance shall include, without limitation, coverage for claims and demands for bodily injury or damage to property related to sudden and accidental releases of environmental contamination, hazardous materials or pollution, or (ii) Tenant shall take out and maintain a Pollution/Environmental Policy covering the environmental risks of Tenant's business with limits of not less than Two Million Dollars ($2,000,000) per occurrence and not less than Three Million Dollars ($3,000,000) in the aggregate, with respect to environmental contamination and pollution of the Property caused by Tenant) which may be claimed to have occurred from and after the time any of the Tenant Parties shall first enter the Premises, of not less than Two Million Dollars ($2,000,000) per occurrence, Five Million Dollars ($5,000,000) aggregate, and from time to time thereafter shall be not less than such higher amounts, if procurable, as may be reasonably required by Landlord. Tenant shall also carry umbrella liability coverage on a follow form basis in an amount of no less than Ten Million Dollars ($10,000,000). Such policy shall also include contractual liability coverage covering Tenant's liability assumed under this Lease, including without limitation Tenant's indemnification obligations. Such insurance policy(ies) shall name Landlord, Fee Owner, Landlord's managing agent and persons claiming by, through or under them, if any, as additional insureds.

(b) Tenant shall take out and maintain throughout the Term on a primary and non-contributory basis a policy of fire, vandalism, malicious mischief, extended coverage and so-called "special form" or special cause of loss property insurance in an amount equal to one hundred percent (100%) of the replacement cost insuring (i) all items or components of Tenant's Fitout and Alterations (collectively, the "**Tenant-Insured Improvements**"), and (ii) Tenant's furniture, equipment, fixtures and property of every kind, nature and description related or arising out of Tenant's leasehold estate hereunder, which may be in or upon the Premises or the Building, including without limitation Tenant's Rooftop Equipment and all of Tenant's animals (collectively, "**Tenant's Property**"). Such insurance shall insure the interests of both Landlord and Tenant as their respective interests may appear from time to time.

(c) Tenant shall take out and maintain a policy of business interruption insurance throughout the Term sufficient to cover at least twelve (12) months of Rent due hereunder and Tenant's business losses during such 12-month period.

(d) During periods when Tenant's Fitout or any Alterations are being performed, Tenant shall maintain (or cause to be maintained) so-called "special form" or special cause of loss property insurance or its equivalent and/or Builders Risk Insurance on 100% replacement cost coverage basis, including hard and soft costs coverages. Such insurance shall protect and insure Landlord, Landlord's agents, Tenant and Tenant's contractors, as their interests may appear, against loss or damage by fire, water damage, vandalism and malicious mischief, and such other risks as are customarily covered by so-called "special form" or special cause of loss property / builders risk coverage or its equivalent and shall otherwise include no less than the coverage terms required for property insurance under Section 14.1(b) above.

(e) [Intentionally Omitted].

(f) Tenant shall take out and maintain an Automobile Liability Policy for owned, hired and non-owned automobiles, with limits of liability of not less than One Million Dollars ($1,000,000) combined single limit each accident for bodily injury and property damage.

(g) Tenant shall procure and maintain at its sole expense medical malpractice insurance in commercially reasonable amounts during such periods, if any, that Tenant engages in the practice of medicine by licensed physicians, nurses or other medical personnel providing services to human patients; provided, however, that the foregoing coverage shall not be separately required for clinical trials to the extent that subjects, rather than patients, are enrolled in the clinical trials and such clinical trials are otherwise covered by the products liability coverage set forth in Section 14.1(a) above.

(h) Tenant shall procure and maintain at its sole expense such additional insurance as may be necessary to comply with any Legal Requirements.

(i) The insurance required pursuant to Sections 14.1(a), (b), (c), (d), (e), (f), (g) and (h) (collectively, "**Tenant's Insurance Policies**") shall be effected with insurers approved by Landlord, with a rating of not less than "**A-VII**" in the current Best's Insurance Reports, and authorized to do business in the Commonwealth of Massachusetts under valid and enforceable policies. Tenant shall provide Landlord with at least thirty (30) days' prior written

notice if any of Tenant's Insurance Policies are canceled, not renewed (unless replaced with another policy meeting the requirements hereof) or modified in a manner not meeting the requirements hereof. Tenant's Insurance Policies may include commercially reasonable deductibles given the size and financial strength of Tenant. On or before the date on which any of the Tenant Parties shall first enter the Premises and thereafter not less than fifteen (15) days prior to the expiration date of each expiring policy, Tenant shall deliver to Landlord binders of Tenant's Insurance Policies issued by the respective insurers setting forth in full the provisions thereof together with evidence satisfactory to Landlord of the payment of all premiums for such policies. In the event of any claim, and upon Landlord's request, Tenant shall deliver to Landlord complete copies of Tenant's Insurance Policies. Upon request of Landlord, Tenant shall deliver to any Mortgagee copies of the foregoing documents.

14.2. Indemnification.

(a) Except to the extent caused by the negligence or willful misconduct of Landlord, Tenant shall defend, indemnify and save the Landlord Parties harmless from and against any and all Claims asserted by or on behalf of any person, firm, corporation or public authority arising from (i) Tenant's breach of any covenant or obligation under this Lease; (ii) any injury to or death of any person, or loss of or damage to property, sustained or occurring in, upon, at or about the Premises; (iii) any injury to or death of any person, or loss of or damage to property (A) arising out of the use or occupancy of the Premises by and/or (B) caused by or arising from the negligence or willful misconduct of any of the Tenant Parties; and (iv) on account of or based upon any work or thing whatsoever done (other than by Landlord or any of the Landlord Parties) at the Premises during the Term and during the period of time, if any, prior to the Term Commencement Date that any of the Tenant Parties may have been given access to the Premises. Tenant shall require its subtenants and any other occupants of the Premises to provide similar indemnities in favor of the Landlord Parties in a form reasonably acceptable to Landlord.

(b) Except to the extent caused by the negligence or willful misconduct of any of the Tenant Parties, Landlord shall, subject to Sections 14.5 and 25.9 hereof, defend, indemnify and save Tenant harmless from and against any and all Claims asserted by or on behalf of any person, firm, corporation or public authority to the extent directly arising from (i) Landlord's breach of any covenant or obligation under this Lease, or (ii) any injury to or death of any person or loss of or damage to property occurring within the Property to the extent directly caused by or arising from the negligence or willful misconduct of Landlord.

14.3. Property of Tenant. Tenant covenants and agrees that, to the maximum extent permitted by Legal Requirements, all of Tenant's Property at the Premises shall be at the sole risk and hazard of Tenant, and that if the whole or any part thereof shall be damaged, destroyed, stolen or removed from any cause or reason whatsoever, no part of said damage or loss shall be charged to, or borne by, Landlord, except, subject to Section 14.5 hereof, to the extent such damage or loss is due to the negligence or willful misconduct of any of the Landlord Parties.

14.4. Limitation of Landlord's Liability for Damage or Injury. Landlord shall not be liable for any injury or damage to persons, animals, or property resulting from fire, explosion, falling plaster, steam, gas, air contaminants or emissions, electricity, electrical or electronic

emanations or disturbance, water, rain or snow or leaks from any part of the Building or from the pipes, appliances, equipment or plumbing works or from the roof, street or sub-surface or from any other place or caused by dampness, vandalism, malicious mischief or by any other cause of whatever nature, except to the extent caused by or due to the negligence or willful misconduct of any of the Landlord Parties, and then, where notice and an opportunity to cure are appropriate (i.e., where Tenant has an opportunity to know or should have known of such condition sufficiently in advance of the occurrence of any such injury or damage resulting therefrom as would have enabled Landlord to prevent such damage or loss had Tenant notified Landlord of such condition) only after (i) notice to Landlord of the condition claimed to constitute negligence or willful misconduct, and (ii) the expiration of a reasonable time after such notice has been received by Landlord without Landlord having commenced to take all reasonable and practicable means to cure or correct such condition; and pending such cure or correction by Landlord, Tenant shall take all reasonably prudent temporary measures and safeguards to prevent any injury, loss or damage to persons or property. Notwithstanding the foregoing, in no event shall any of the Landlord Parties be liable for any loss which is covered by insurance policies actually carried or required to be so carried by this Lease; nor shall any of the Landlord Parties be liable for any acts, omissions or negligence of other tenants or persons in the Building or damage caused by operations in construction of any private, public, or quasi-public work; nor shall any of the Landlord Parties be liable for any latent defect in the Premises or in the Building.

14.5. Waiver of Subrogation; Mutual Release. Landlord and Tenant each hereby waives on behalf of itself and its property insurers (none of which shall ever be assigned any such claim or be entitled thereto due to subrogation or otherwise) any and all rights of recovery, claim, action, or cause of action against the other and its agents, officers, servants, partners, shareholders, or employees (collectively, the "**Related Parties**") for any loss or damage (excluding rights of recovery, claims, actions, and causes of action relating to damage to the roof of the Building caused by Tenant but including rights of recovery, claims, actions, and causes of action relating to damage to the roof of the Building caused by any Casualty (hereinafter defined)) that may occur to or within the Premises or the Building or any improvements thereto, or any personal property of such party therein which is insured against under any property insurance policy actually being maintained by the waiving party from time to time, even if not required hereunder, or which would be insured against under the terms of any insurance policy required to be carried or maintained by the waiving party hereunder, whether or not such insurance coverage is actually being maintained, including, in every instance, such loss or damage that may be caused by the negligence of the other party hereto and/or its Related Parties. Landlord and Tenant each agrees to cause appropriate clauses to be included in its property insurance policies necessary to implement the foregoing provisions.

14.6. Tenant's Acts—Effect on Insurance. Tenant shall not do or permit any Tenant Party to do any act or thing upon the Premises or elsewhere in the Building which will invalidate or be in conflict with any insurance policies or warranties covering the Building and the fixtures and property therein; and shall not do, or permit to be done, any act or thing upon the Premises which shall subject Landlord to any liability or responsibility for injury to any person or persons or to property by reason of any business or operation being carried on upon said Premises or for any other reason. If by reason of Tenant's particular use of the Premises (as opposed to office and laboratory use generally) or the failure of Tenant to comply with the provisions of this Lease, the insurance rate applicable to any policy of insurance shall at any time thereafter be

higher than it otherwise would be, Tenant shall reimburse Landlord upon demand for that part of any insurance premiums which shall have been charged because of such use or failure by Tenant, together with interest at the Default Rate until paid in full, within thirty (30) days after receipt of an invoice therefor.

15. CASUALTY: TAKING

15.1. Damage. If the Premises are damaged in whole or part because of fire or other insured casualty ("**Casualty**"), or if the Premises are subject to a taking in connection with the exercise of any power of eminent domain, condemnation, or purchase under threat or in lieu thereof (any of the foregoing, a "**Taking**"), then unless this Lease is terminated in accordance with Section 15.2 below, Landlord shall restore the Laboratory Addition and/or the Premises to substantially the same condition as existed immediately following completion of Landlord's Work, or in the event of a partial Taking which affects the Laboratory Addition and the Premises, restore the remainder of the Laboratory Addition and the Premises not so Taken to substantially the same condition as is reasonably feasible. Subject to delays due to riots, acts of God, war, acts of terrorism, governmental regulation, unusual scarcity of or inability to obtain labor or materials, labor difficulties, casualty or any other causes reasonably beyond Landlord's control (collectively "**Landlord's Force Majeure**"), delays due to any act or omission by any of the Tenant Parties which causes an actual delay in the performance of Landlord's restoration, and subject further to rights of Mortgagees, Legal Requirements then in existence and to delays for adjustment of insurance proceeds or Taking awards, as the case may be, Landlord shall substantially complete such restoration within one (1) year after the date of the Casualty or taking of possession by the Taking authority. Upon substantial completion of such restoration by Landlord, Tenant shall use diligent efforts to complete restoration of the Premises to substantially the same condition as existed immediately prior to such Casualty or Taking, as the case may be, or to such other condition as may be approved by Landlord pursuant to the provisions of Section 11 expeditiously. Tenant agrees to cooperate with Landlord in such manner as Landlord may reasonably request to assist Landlord in collecting insurance proceeds due in connection with any Casualty which affects the Premises or the Laboratory Addition. In no event shall Landlord be required to expend more than the Net (hereinafter defined) insurance proceeds Landlord receives for damage to the Premises and/or the Laboratory Addition or the Net Taking award attributable to the Premises and/or the Laboratory Addition. Net means the insurance proceeds or Taking award actually paid to Landlord (and not paid over to a Mortgagee) less all costs and expenses, including adjusters and attorney's fees, of obtaining the same. In the fiscal year in which a Casualty occurs, there shall be included in Operating Costs up to One Hundred Fifty Thousand Dollars ($150,000) of the deductible under Landlord's property insurance policy. Under no circumstances shall Landlord be required to repair any damage to, or make any repairs to or replacements of. (a) any Tenant-Insured Improvements (except as Landlord may elect pursuant to this Section 15.1). (b) the Office Building, or (c) the Atrium.

15.2. Termination Rights.

(a) Landlord's Termination Rights. Landlord may terminate this Lease upon thirty (30) days' prior written notice to Tenant if (i) any material portion of the Building or any material means of access thereto is subject to a Taking; or (ii) more than thirty-five percent (35%) of the Building is damaged by Casualty.

(b) Tenant's Termination Right. If Landlord is so required but fails to complete restoration of the Premises within the time frames and subject to the conditions set forth in Section 15.1 above, then Tenant may terminate this Lease upon thirty (30) days' written notice to Landlord; provided, however, that if Landlord completes such restoration within thirty (30) days after receipt of any such termination notice, such termination notice shall be null and void and this Lease shall continue in full force and effect. The remedies set forth in this Section 15.2(b) and in Section 15.2(c) below are Tenant's sole and exclusive rights and remedies based upon Landlord's failure to complete the restoration of the Premises as set forth herein.

(c) Either Party May Terminate.

(i) In the case of any Casualty or Taking affecting the Premises and occurring during the last twelve (12) months of the Term, then (A) if such Casualty or Taking results in more than twenty-five percent (25%) of the floor area of the Premises being unsuitable for the Permitted Uses, or (B) the damage to the Premises costs more than $250,000 to restore, then either Landlord or Tenant shall have the option to terminate this Lease upon thirty (30) days' written notice to the other.

(ii) In addition, if any Mortgagee does not release sufficient insurance proceeds to cover the cost of Landlord's restoration work, Landlord shall notify Tenant thereof. In such event, unless Landlord agrees in writing to cover the difference, Landlord or Tenant may terminate this Lease by written notice to the other within thirty (30) days after such notice.

(iii) Furthermore, if the estimated time for Landlord to complete Landlord's restoration work exceeds one (1) year from the date of the Casualty or taking of possession by the Taking authority, either Landlord or Tenant shall have the option to terminate this Lease upon thirty (30) days' written notice to the other.

(d) Automatic Termination. In the case of a Taking of the entire Premises, then this Lease shall automatically terminate as of the date of possession by the Taking authority.

(e) Insurance Proceeds. Tenant shall assign to Landlord a portion of its right, title and interest in and to the insurance proceeds for Tenant's Fitout if this Lease expires or is terminated pursuant to any provision of this Lease (including without limitation pursuant to this Article 15 or Article 20 below) prior to the completion of Tenant's restoration pursuant to Section 15.1 above, equal to the sum of (A) unamortized amounts paid pursuant to the Work Letter by Landlord for Tenant's Fitout, and (B) the unamortized costs of any portion of any other Alterations that were not designated for removal pursuant to Article 11, calculated on a straight line basis, without interest, over the Term.

(f) Notwithstanding anything to the contrary contained herein, Tenant may not terminate this Lease pursuant to this Article 15 if the Casualty in question was caused by the gross negligence or willful misconduct of any of the Tenant Parties.

15.3. Taking for Temporary Use. If the Premises are Taken for temporary use, this Lease and Tenant's obligations, including without limitation the payment of Rent, shall continue. For purposes hereof, a "Taking for temporary use" shall mean a Taking of ninety (90) days or less.

15.4. Disposition of Awards. Except for any separate award for Tenant's movable trade fixtures, relocation expenses, and unamortized leasehold improvements paid for by Tenant (provided that the same may not reduce Landlord's award), all Taking awards to Landlord or Tenant shall be Landlord's property without Tenant's participation, and Tenant hereby assigns to Landlord Tenant's interest, if any, in such award. Tenant may pursue its own claim against the Taking authority.

16. ESTOPPEL CERTIFICATE.

Each of Landlord and Tenant shall at any time and from time to time upon not less than ten (10) business days' prior notice from the other, execute, acknowledge and deliver to the requesting party a statement in writing certifying that this Lease is unmodified and in full force and effect (or if there have been modifications, that the same is in full force and effect as modified and stating the modifications), and the dates to which Rent has been paid in advance, if any, stating whether or not the requesting party is in default in performance of any covenant, agreement, term, provision or condition contained in this Lease and, if so, specifying each such default, and such other facts as the requesting party may reasonably request, it being intended that any such statement delivered pursuant hereto may be relied upon by Landlord and Tenant, any prospective or actual capital partner of either, any party to the REA, any prospective purchaser of the Building or any portion thereof or of any interest of Landlord therein, any Mortgagee or prospective Mortgagee thereof, any lessor or prospective lessor thereof, any lessee or prospective lessee thereof, any prospective assignee of any mortgage thereof, any prospective assignee or sublessee of Tenant or any investor in or lender to Tenant. Time is of the essence with respect to any such requested certificate, Tenant hereby acknowledging the importance of such certificates in mortgage financing arrangements, prospective sales and the like. If Tenant shall fail to execute and deliver to Landlord any such statement within such 10-business day period, Tenant hereby appoints Landlord as Tenant's attorney-in-fact in its name and behalf to execute such statement, such appointment being coupled with an interest.

17. HAZARDOUS MATERIALS

17.1. Prohibition. Tenant shall not, without the prior written consent of Landlord, bring or permit to be brought to or kept at, in or on the Premises or elsewhere in the Building or the Property (a) any inflammable, combustible or explosive fluid, material, chemical or substance (except for *de minimis* quantities of standard office and cleaning supplies stored in compliance with Environmental Laws (hereinafter defined) and in proper containers); and (b) any Hazardous Material (hereinafter defined), other than the types and quantities of Hazardous Materials which are listed on Exhibit 10 attached hereto ("**Tenant's Hazardous Materials**"), provided that the same shall at all times be brought to, kept at or used in so-called 'control areas' (the number and size of which shall be reasonably determined by Landlord) and in accordance with all applicable Environmental Laws (hereinafter defined) and prudent environmental practice (including without limitation best practices to minimize quantities of stored Hazardous Materials using a "just in time" method of purchasing the same) and (with respect to medical waste and so-called "biohazard" materials) good scientific and medical practice, and provided further that in no event shall Tenant generate, produce, bring upon, use, store or treat any infectious biological micro-organisms or any other Hazardous Materials in the Premises with a risk category above the level of Biosafety Level 2 as established and described

by the Department of Health and Human Services Publication Biosafety in Microbiological and Biomedical Laboratories (Fifth Edition) (as it may be further revised, the "**BMBL**") or such nationally recognized new or replacement standards as may be reasonably selected by Landlord; and provided further that to the extent any Legal Requirement sets a maximum quantity of any Hazardous Materials which may be stored, used or brought into the Building without additional licensing, permitting or authorizations therefor, Tenant shall not be permitted to use, store or bring into the Building more than Tenant's Share of such Hazardous Materials. In all events, Tenant shall comply with all applicable provisions of the BMBL. Tenant shall be responsible for assuring that all laboratory uses are adequately and properly vented. On or before each anniversary of the Rent Commencement Date, and at least thirty (30) days prior to any earlier date during the 12-month period on which Tenant intends to add a new Hazardous Material to, or materially increase the quantity of any Hazardous Material already on, the list of Tenant's Hazardous Materials, Tenant shall submit to Landlord an updated list of Tenant's Hazardous Materials for Landlord's review and approval, which approval shall not be unreasonably withheld, conditioned or delayed. Tenant shall provide such further information concerning any Tenant's Hazardous Materials and/or their use, storage and/or disposal within thirty (30) days of Landlord's reasonable request concerning the same. Landlord shall have the right, from time to time, in accordance with the provisions of Section 2.3 to inspect the Premises for compliance with the terms of this Section 17.1 at Tenant's sole cost and expense. With respect to any Hazardous Material brought or permitted to be brought or kept in or on the Premises or elsewhere in the Building or the Property in accordance with the foregoing, Tenant shall (i) not permit any such Hazardous Material to escape, be released or be disposed in or about the Premises, the Building or the Land and (ii) within five (5) business days of Landlord's reasonable request, which request shall not be made more frequently than one time per calendar year unless otherwise required by a governmental authority or Landlord reasonably suspects, that a release of a Hazardous Material has occurred upon the Premises, provide evidence reasonably satisfactory to Landlord of Tenant's compliance with all applicable Environmental Laws including copies of all licenses, permits and registrations that Tenant has been required to obtain prior to handling any Hazardous Material at the Premises and that have not been previously provided to Landlord. Notwithstanding the foregoing, with respect to any of Tenant's Hazardous Materials which Tenant does not properly handle, store or dispose of in compliance with all applicable Environmental Laws (hereinafter defined), prudent environmental practice and (with respect to medical waste and so-called "biohazard" materials) good scientific and medical practice, Tenant shall, upon written notice from Landlord, no longer have the right to bring such material into the Building or the Property until Tenant has demonstrated, to Landlord's reasonable satisfaction, that Tenant has implemented programs to thereafter properly handle, store or dispose of such material. In order to induce Landlord to waive its otherwise applicable requirement that Tenant maintain insurance in favor of Landlord against liability arising from the presence of radioactive materials in the Premises, and without limiting the foregoing, Tenant hereby represents and warrants to Landlord that at no time during the Term will Tenant bring upon, or permit to be brought upon, the Premises any radioactive materials whatsoever.

17.2. Environmental Laws. For purposes hereof, "**Environmental Laws**" shall mean all laws, statutes, ordinances, rules and regulations of any local, state or federal governmental authority having jurisdiction concerning environmental, health and safety matters, including but not limited to any discharge by any of the Tenant Parties into the air (including outdoor air and indoor air), surface water, sewers, soil or groundwater of any Hazardous Material (hereinafter

defined) whether within or outside the Premises, including, without limitation (a) the Federal Water Pollution Control Act, 33 U.S.C. Section 1251 et seq., (b) the Federal Resource Conservation and Recovery Act, 42 U.S.C. Section 6901 et seq., (c) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. Section 9601 et seq., (d) the Toxic Substances Control Act of 1976, 15 U.S.C. Section 2601 et seq., (e) Chapter 21C of the General Laws of Massachusetts, and (f) Chapter 2 IE of the General Laws of Massachusetts. Tenant, at its sole cost and expense, shall comply with (i) all Environmental Laws, and (ii) any rules, requirements and safety procedures of the Massachusetts Department of Environmental Protection, the City of Cambridge and any insurer of the Building or the Premises with respect to Tenant's use, storage and disposal of any Hazardous Materials.

17.3. Hazardous Material Defined. As used herein, the term "**Hazardous Material**" means asbestos, oil or any hazardous, radioactive or toxic substance, material or waste or petroleum derivative which is or becomes regulated by any Environmental Law, including without limitation live organisms, viruses and fungi, medical waste and any so-called "biohazard" materials, and any materials on the right to know list of the Occupational Safety and Health Administration. The term "**Hazardous Material**" includes, without limitation, oil and/or any material or substance which is (i) designated as a "hazardous substance," "hazardous material," "oil," "hazardous waste" or toxic substance under any Environmental Law or (ii) contains any component now or hereafter designated as such.

17.4. Testing. If any Mortgagee or governmental authority requires testing to determine whether there has been any release of Hazardous Material(s) and such testing is required as a result of the acts or omissions of any of the Tenant Parties, then Tenant shall reimburse Landlord upon demand, as additional rent, for the reasonable costs thereof, together with interest at the Default Rate until paid in full. If and to the extent as a result of such testing Tenant is found to have caused any release of a Hazardous Material at, in, on, under or upon the Property, all reasonable, out of pocket costs incurred by Landlord in connection with Landlord's monitoring of Tenant's compliance with Article 17, including Landlord's reasonable attorneys' fees and costs, shall be additional rent and shall be due and payable to Landlord within thirty (30) days after the delivery to Tenant of Landlord's invoice therefor, accompanied by copies of third-party invoices evidencing the amount of such fees and costs. Tenant shall execute affidavits, certifications and the like, as may be reasonably requested by Landlord from time to time concerning Tenant's best knowledge and belief concerning the presence of Hazardous Materials at, in or, on or under the Premises, the Building or the Property. From time to time during the term of this Lease, Tenant shall provide Landlord with such evidence of Tenant's compliance with the terms of this Article 17 as Landlord may reasonably request, which request shall not be made more frequently than one time per calendar year unless otherwise required by a governmental authority or Landlord reasonably suspects that a release of a Hazardous Material has occurred at or upon the Premises. Further, at Landlord's option, Landlord may (but shall have no obligation to) obtain a report or reports from time to time (each, a "**Landlord's Report**") addressed to Landlord by a licensed environmental engineer or certified industrial hygienist, which Landlord's Report shall be based on the environmental engineer's or certified industrial hygienist's inspection of the Premises and shall set forth the current condition of the Premises with respect to Tenant's use, storage and disposal of Hazardous Materials. Landlord may obtain a Landlord's Report at Tenant's cost at any time that Tenant is in default under this Lease. In addition, if any Landlord's Report indicates that there is a material deficiency in

compliance with the standards set forth in this Article 17, then (x) Tenant shall reimburse Landlord for the costs of such Landlord's Report upon demand, as additional rent, together with interest at the Default Rate until paid in full, (y) Tenant shall promptly remedy such deficiency, and (z) Landlord shall be entitled to a written evaluation by Landlord's consultant at Tenant's cost to confirm the proper completion of such remedy, such costs also to be reimbursed by Tenant to Landlord upon demand as additional rent, together with interest at the Default Rate until paid in full.

17.5. Hazardous Materials Indemnity; Remediation.

(a) Tenant hereby covenants and agrees to indemnify, defend and hold the Landlord Parties harmless from and against any and all Claims against any of the Landlord Parties arising out of contamination of any part of the Property or other adjacent property, or exacerbation of any contamination of any part of the Property or adjacent property, which contamination or exacerbation, as the case may be, arises as a result of: (i) the presence of Hazardous Material in the Premises, the presence of which is caused by any act or omission of any of the Tenant Parties, or (ii) from a breach by Tenant of its obligations under this Article 17. This indemnification of the Landlord Parties by Tenant includes, without limitation, reasonable costs incurred in connection with any investigation of site conditions or any cleanup, remedial, removal or restoration work or any other response action required by any federal, state or local governmental agency or political subdivision because of Hazardous Material present in the soil, soil vapor, or ground water at, on or under, or any indoor air in, the Building based upon the circumstances identified in the first sentence of this Section 17.5. In the event Tenant's indemnity obligations under both Section 14.2 above and this Section 17.5 apply, the broader indemnity shall be applicable. Without limiting the foregoing, if the presence of any Hazardous Material in the Building or otherwise at the Property is caused or permitted by any of the Tenant Parties and results in any contamination of any part of the Property or any adjacent property, Tenant shall promptly take all actions at Tenant's sole cost and expense as are necessary to return the Property and/or the Building or any adjacent property to their condition as of the date of this Lease, provided that Tenant shall first obtain Landlord's written approval of such actions, which approval shall not be unreasonably withheld, conditioned or delayed so long as such actions, in Landlord's reasonable discretion, would not potentially have any adverse effect on the Property, and, in any event, Landlord shall not withhold its approval of any proposed actions which are required by applicable Environmental Laws.

(b) Without limiting the obligations set forth in Section 17.5(a) above, if any Hazardous Material is in, on, under, at or about the Building or the Property as a result of the acts or omissions of any of the Tenant Parties and results in any contamination of any part of the Property or any adjacent property that is in violation of any applicable Environmental Law or that requires the performance of any response action pursuant to any Environmental Law, Tenant shall promptly take all actions at Tenant's sole cost and expense as are necessary to reduce such Hazardous Material to amounts below any applicable Reportable Quantity, any applicable Reportable Concentration and any other applicable standard set forth in any Environmental Law such that (i) no further response actions, (ii) no Activity and Use Limitation (as that term is defined in the Massachusetts Contingency Plan, 310 CMR 40.0000 et seq. (the "**MCP**")). and (iii) no Condition (as that term is defined in the MCP) is or are required; provided that Tenant shall first obtain Landlord's written approval of such actions, which approval shall not be

unreasonably withheld, conditioned or delayed so long as such actions would not be reasonably expected to have an adverse effect on the market value or utility of the Property for the Permitted Uses, and in any event, Landlord shall not withhold its approval of any proposed actions which are required by applicable Environmental Laws and comply with the provisions of Sections 17.5(b)(i). (ii). and (iii). above (such approved actions. "**Tenant's Remediation**").

(c) In the event that Tenant fails to complete Tenant's Remediation prior to the end of the Term, then:

(i) until the completion of Tenant's Remediation (as evidenced by the certification of Tenant's Licensed Site Professional (as such term is defined by applicable Environmental Laws), who shall be reasonably acceptable to Landlord) (the "**Remediation Completion Date**"). Tenant shall pay to Landlord, with respect to the portion of the Premises which reasonably cannot be occupied by a new tenant until completion of Tenant's Remediation, (A) additional rent on account of Operating Costs and Taxes and (B) Base Rent in an amount equal to the greater of (1) the fair market rental value of such portion of the Premises (determined in substantial accordance with the process described in Section 1.2 above), and (2) Base Rent attributable to such portion of the Premises in effect immediately prior to the end of the Term; and

(ii) Tenant shall maintain responsibility for Tenant's Remediation and Tenant shall complete Tenant's Remediation as soon as reasonably practicable in accordance with all Environmental Laws. If Tenant does not diligently pursue completion of Tenant's Remediation, Landlord shall have the right to either (A) assume control for the performance of Tenant's Remediation, in which event Tenant shall pay all reasonable costs and expenses of Tenant's Remediation (it being understood and agreed that all costs and expenses of Tenant's Remediation incurred pursuant to contracts entered into by Tenant shall be deemed reasonable) within thirty (30) days of demand therefor (which demand shall be made no more often than monthly), and Landlord shall be substituted as the party identified on any governmental filings as the party performing such Tenant's Remediation or (B) require Tenant to maintain responsibility for Tenant's Remediation, in which event Tenant shall complete Tenant's Remediation as soon as reasonably practicable in accordance with all Environmental Laws, it being understood that Tenant's Remediation shall not contain any requirement that Tenant remediate any contamination to levels or standards more stringent than those associated with the Property's current office, research and development, laboratory, and vivarium uses.

17.6. Disclosures. Prior to bringing any Hazardous Material into any part of the Property, Tenant shall deliver to Landlord the following information with respect thereto: (a) a description of handling, storage, use and disposal procedures; (b) all plans or disclosures and/or emergency response plans which Tenant has prepared, including without limitation Tenant's Spill Response Plan, and all plans which Tenant is required to supply to any governmental agency or authority pursuant to any Environmental Laws; and (c) other information reasonably requested by Landlord.

17.7. Removal. Tenant shall be responsible, at its sole cost and expense, for Hazardous Material and other biohazard disposal services for the Premises. Such services shall be performed by contractors reasonably acceptable to Landlord and on a sufficient basis to ensure

that the Premises are at all times kept neat, clean and free of Hazardous Materials and biohazards except in appropriate, specially marked containers reasonably approved by Landlord. In addition, if any Legal Requirements or the trash removal company requires that any substances be disposed of separately from ordinary trash, Tenant shall make arrangements at Tenant's expense for such disposal directly with a qualified and licensed disposal company at a lawful disposal site.

18. RULES AND REGULATIONS

18.1. Rules and Regulations. Tenant will faithfully observe and comply with all reasonable rules and regulations promulgated from time to time with respect to the Laboratory Addition, the Property and construction within the Property (collectively, the "**Rules and Regulations**"). The current version of the Rules and Regulations is attached hereto as Exhibit 11. In the case of any conflict between the provisions of this Lease and any future rules and regulations, the provisions of this Lease shall control. Nothing contained in this Lease shall be construed to impose upon Landlord any duty or obligation to enforce the Rules and Regulations or the terms, covenants or conditions in any other lease as against any other tenant and Landlord shall not be liable to Tenant for violation of the same by any other tenant, its servants, employees, agents, contractors, visitors, invitees or licensees, provided, however, Landlord agrees to enforce the Rules and Regulations against all tenants unaffiliated with Landlord in a non-discriminatory manner.

18.2. Energy Conservation. Notwithstanding anything to the contrary contained herein, Landlord may institute upon written notice to Tenant such policies, programs and measures as may be necessary, required, or expedient for the conservation and/or preservation of energy or energy services and/or the resiliency of the Building (with respect to flooding or otherwise), including without limitation such policies, programs and measures as may be necessary to achieve and/or maintain any LEED or similar certification (collectively, the "**Conservation Program**"), provided, however, that the Conservation Program does not, by reason of such policies, programs and measures, reduce the level of energy or energy services being provided to the Premises below the level of energy or energy services then being provided in comparable combination laboratory, research and development and office buildings in the Kendall Square area, or as may be necessary or required to comply with Legal Requirements or standards or the other provisions of this Lease. Upon receipt of such notice, Tenant shall comply with the Conservation Program and reasonable reporting requirements relating thereto.

18.3. Recycling. Upon written notice, Landlord may establish policies, programs and measures for composting and/or the recycling of paper, products, plastic, tin and other materials (a "**Recycling Program**"). Upon receipt of such notice. Tenant will comply with the Recycling Program at Tenant's sole cost and expense.

19. LAWS AND PERMITS

19.1. Legal Requirements. Tenant shall be responsible at its sole cost and expense for complying with (and keeping the Premises in compliance with) all Legal Requirements which are applicable to Tenant's Rooftop Equipment and/or Tenant's particular use (as opposed to office and lab use generally) or occupancy of, or Tenant's Fitout or Alterations made by or on

behalf of Tenant to, the Premises. In addition, Tenant shall, at Tenant's sole expense, comply with the "tenant" obligations pursuant to that certain Parking and Traffic Demand Management Plan dated March 11, 2016 (as the same may be amended, the PTDM) including without limitation the obligations to: designate a liaison to work with the employee transportation coordinator designated by Landlord; join the Charles River TMA (or replacement shuttle service provider); provide Tenant's employees and patrons with access to the Charles River TMA's programs and EZ Ride shuttle service (or equivalent shuttle service) fare free; offer an emergency ride home program to all employees who commute by non-SOV mode at least three days per week and who are eligible to park in the Parking Areas; allow employees to set aside pre-tax funds as allowed under the Commuter Choice provisions of the Federal Tax Code; and offer and provide the subsidy options described therein) and Tenant shall provide information to Landlord in connection with any reporting requirements thereunder and cooperate with Landlord in encouraging employees to seek alternate modes of transportation. Tenant is encouraged to allow flexible work schedules within typical work hours for employees in order to reduce peak impacts of commuting and to work with the Cambridge Office of Workforce Development to expand employment opportunities for Cambridge residents (see also Section 25.24 below). Tenant shall furnish all data and information to governmental authorities, with a copy to Landlord, as required in accordance with Legal Requirements as they relate to Tenant's use or occupancy of the Premises or the Building. If Tenant receives notice of any violation of Legal Requirements applicable to the Premises or the Building, it shall give prompt notice thereof to Landlord. Nothing contained in this Section 19.1 shall be construed to expand the uses permitted hereunder beyond the Permitted Uses.

19.2. Required Permits. Tenant shall, at Tenant's sole cost and expense, apply for, seek and obtain all necessary state and local licenses, permits and approvals needed for the operation of Tenant's business and/or Tenant's Rooftop Equipment, including without limitation, any and all necessary permits and approvals directly or indirectly relating or incident to the conduct of its activities on the Premises, its scientific experimentation, transportation, storage, handling, use and disposal of any Hazardous Materials or animals or laboratory specimens, (collectively, the "**Required Permits**"), as soon as reasonably possible. Tenant shall thereafter maintain all Required Permits. Tenant, at Tenant's expense, shall at all times comply with the terms and conditions of each such Required Permit. Landlord shall reasonably cooperate with Tenant, at Tenant's sole cost and expense, in connection with its application for Required Permits. Within ten (10) days of a request by Landlord, which request shall be made not more than once during each period of twelve (12) consecutive months during the Term hereof, unless otherwise requested by any Mortgagee or unless Landlord reasonably suspects that Tenant has violated the provisions of this Article 19, Tenant shall furnish Landlord with copies of all Required Permits that Tenant has obtained together with a certificate certifying that such permits are all of the permits that Tenant has obtained with respect to the Premises.

20. DEFAULT

20.1. Events of Default. The occurrence of any one or more of the following events shall constitute an "**Event of Default**" hereunder by Tenant:

(a) If Tenant fails to make any payment of Rent or any other payment required hereunder, as and when due (a "**Monetary Default**"), and such failure shall continue for

a period of three (3) days after notice thereof from Landlord to Tenant; provided, however, an Event of Default shall occur hereunder without any obligation of Landlord to give any notice if (i) Tenant fails to make any payment on or before the due date therefor, and (ii) Landlord has given Tenant written notice under this Section 20.1(a) on more than one (1) occasion during the twelve (12) month interval preceding such failure by Tenant;

(b) If Tenant shall fail to timely perform its obligations under the Work Letter and such failure continues for fifteen (15) business days after notice thereof;

(c) If Tenant shall vacate all or substantially all of the Premises without having a permitted Transfer in full force and effect with respect to such vacated space (provided, however, it shall not be an Event of Default if Tenant vacates all or substantially all of the Premises so long as (i) Tenant maintains all insurance required under Section 14.1 above, and (ii) the Premises are kept lit, well- maintained and secured); or if Tenant shall abandon the Premises (whether or not the keys shall have been surrendered or the Rent shall have been paid);

(d) If Tenant shall fail to execute and deliver to Landlord an estoppel certificate pursuant to Article 16 above or a subordination and attornment agreement pursuant to Article 22 below, within the timeframes set forth therein and such failure continues for five (5) days after notice thereof;

(e) If Tenant shall fail to maintain any insurance required hereunder;

(f) If Tenant shall fail to restore the Security Deposit to its original amount or deliver a replacement Letter of Credit as required under Article 7 above;

(g) If Tenant causes or suffers any release of Hazardous Materials in. on or near the Property:

(h) If Tenant shall make a Transfer in violation of the provisions of Article 13 above, or if any event shall occur or any contingency shall arise whereby this Lease, or the term and estate thereby created, would (by operation of law or otherwise) devolve upon or pass to any person, firm or corporation other than Tenant, except as expressly permitted under Article 133 hereof;

(i) If Tenant fails to comply with (i) the provisions of Sections 2.3, 4.2(a), 4.2(a)(iii)(d), 4.2(b)(vi) or 4.2(b)(vii) above, and such failure shall continue for a period of three (3) calendar days' after written notice thereof from Landlord to Tenant, or (ii) the provisions of Sections 2.4, 2.5, 4.2(a)(i), 4.2(a)(iii)(B), 4.2(a)(iii)(C), 4.2(a)(vi), 4.2(b)(iii) or 4.2(b)(v) and such failure shall continue for a period of ten (10) business days after written notice thereof from Landlord to Tenant; provided, however, an Event of Default shall occur hereunder without any obligation of Landlord to give any notice if (i) Tenant fails to comply with the provisions of any of the foregoing listed subsections above, and (ii) Landlord has given Tenant written notice under this Section 20.1(i) with respect to a particular violation of the same enumerated subsection on more than one (1) occasion during the twelve (12) month interval preceding such failure by Tenant;

(j) The failure by Tenant to observe or perform any of the covenants or provisions of this Lease to be observed or performed by Tenant, other than as specified above, and such failure continues for more than thirty (30) days after notice thereof from Landlord; provided, further, that if the nature of Tenant's default is such that more than thirty (30) days are reasonably required for its cure, then Tenant shall not be deemed to be in default if Tenant shall commence such cure within said thirty (30) day period and thereafter diligently prosecute such cure to completion, which completion shall occur not later than ninety (90) days from the date of such notice from Landlord regardless of the reason for lack of completion;

(k) Tenant shall be involved in financial difficulties as evidenced by an admission in writing by Tenant of Tenant's inability to pay its debts generally as they become due, or by the making or offering to make a composition of its debts with its creditors;

(l) Tenant shall make an assignment or trust mortgage, or other conveyance or transfer of like nature, of all or a substantial part of its property for the benefit of its creditors,

(m) An attachment on mesne process, on execution or otherwise, or other legal process shall issue against Tenant or its property and a sale of any of its assets shall be held thereunder:

(n) intentionally omitted:

(o) The leasehold hereby created shall be taken on execution or by other process of law and shall not be revested in Tenant within thirty (30) days thereafter;

(p) A receiver, sequesterer, trustee or similar officer shall be appointed by a court of competent jurisdiction to take charge of all or any part of Tenant's Property and such appointment shall not be vacated within thirty (30) days; or

(q) Any proceeding shall be instituted by or against Tenant pursuant to any of the provisions of any Act of Congress or State law relating to bankruptcy, reorganizations, arrangements, compositions or other relief from creditors, and, in the case of any proceeding instituted against it, if Tenant shall fail to have such proceedings dismissed within thirty (30) days or if Tenant is adjudged bankrupt or insolvent as a result of any such proceeding.

Wherever "**Tenant**" is used in subsections (k), (l), (m), (n), (o), (p) or (q) inclusive of this Section 20.1, it shall be deemed to include any parent entity of Tenant and any guarantor of any of Tenant's obligations under this Lease.

Tenant shall reimburse Landlord, within thirty (30) days after demand, for up to $2,000.00 of Landlord's reasonable out-of-pocket costs and expenses (including without limitation legal fees and costs) incurred in connection with the preparation and delivery of each notice of default delivered pursuant to this Section 20.1 (which notice of default may include such demand for payment).

20.2. Remedies. Upon an Event of Default, Landlord may, by notice to Tenant, elect to terminate this Lease; and thereupon (and without prejudice to any remedies which might otherwise be available to Landlord, including without limitation, for arrears of Rent or preceding

breach of covenant or agreement and without prejudice to Tenant's liability for damages as hereinafter stated), upon the giving of such notice, this Lease shall terminate as of the date specified therein as though that were the Expiration Date. Upon such termination, Landlord shall have the right to utilize the Security Deposit or draw down the entire Letter of Credit, as applicable, and apply the proceeds thereof to its damages hereunder. Without being taken or deemed to be guilty of any manner of trespass or conversion, and without being liable to indictment, prosecution or damages therefor, Landlord may, by lawful process, enter into and upon the Premises (or any part thereof in the name of the whole); repossess the same, as of its former estate; and expel Tenant and those claiming under Tenant. The words "re-entry" and "re-enter" as used in this Lease are not restricted to their technical legal meanings.

20.3. Damages - Termination.

(a) Upon the termination of this Lease under the provisions of this Article 20, Tenant shall pay to Landlord Rent up to the time of such termination, shall continue to be liable for any preceding breach of covenant, and in addition, shall pay to Landlord as damages, at the election of Landlord, either:

(i) the amount (discounted to present value at the rate of five percent (5%) per annum) by which, at the time of the termination of this Lease (or at any time thereafter if Landlord shall have initially elected damages under Section 20.3(a)(ii) below), (x) the aggregate of Rent projected over the period commencing with such termination and ending on the Expiration Date, exceeds (y) the aggregate projected rental value of the Premises for such period, taking into account a reasonable time period during which the Premises shall be unoccupied, plus all Reletting Costs (hereinafter defined); or

(ii) amounts equal to Rent which would have been payable by Tenant had this Lease not been so terminated, payable upon the due dates therefor specified herein following such termination and until the Expiration Date, provided, however, if Landlord shall re-let the Premises during such period, that Landlord shall credit Tenant with the net rents received by Landlord from such re-letting, such net rents to be determined by first deducting from the gross rents as and when received by Landlord from such re-letting the expenses incurred or paid by Landlord in terminating this Lease, as well as the expenses of re-letting, including altering and preparing the Premises for new tenants, brokers' commissions, and all other similar and dissimilar expenses properly chargeable against the Premises and the rental therefrom (collectively, "**Reletting Costs**"), it being understood that any such re-letting may be for a period equal to or shorter or longer than the remaining Term at Landlord's sole and absolute discretion without otherwise affecting this remedy; and provided, further, that (x) in no event shall Tenant be entitled to receive any excess of such net rents over the sums payable by Tenant to Landlord hereunder and (y) in no event shall Tenant be entitled in any suit for the collection of damages pursuant to this Section 20.3(a)(ii) to a credit in respect of any net rents from a re-letting except to the extent that such net rents are actually received by Landlord prior to the commencement of such suit. If the Premises or any part thereof should be re-let in combination with other space, then proper apportionment on a square foot area basis shall be made of the rent received from such re-letting and of the expenses of re-letting.

(b) In calculating the amount due under Section 20.3(a)(i), above, there shall be included, in addition to the Base Rent, all other considerations agreed to be paid or performed by Tenant, including without limitation Tenant's Share of Operating Costs and Tenant's Tax Share of Taxes, on the assumption that all such amounts and considerations would have increased at the rate of three percent (3%) per annum for the balance of the full term hereby granted.

(c) Suit or suits for the recovery of such damages, or any installments thereof, may be brought by Landlord from time to time at its election, and nothing contained herein shall be deemed to require Landlord to postpone suit until the date when the Term would have expired if it had not been terminated hereunder.

(d) Nothing herein contained shall be construed as limiting or precluding the recovery by Landlord against Tenant of any sums or damages to which, in addition to the damages particularly provided above, Landlord may lawfully be entitled by reason of any Event of Default hereunder.

(e) In lieu of any other damages or indemnity and in lieu of full recovery by Landlord of all sums payable under all the foregoing provisions of this Section 20.3, Landlord may, by written notice to Tenant, at any time after this Lease is terminated under any of the provisions herein contained or is otherwise terminated for breach of any obligation of Tenant and before such full recovery, elect to recover, and Tenant shall thereupon pay, as liquidated damages, an amount equal to the aggregate of (x) an amount equal to the lesser of (1) Rent accrued under this Lease in the twelve (12) months immediately prior to such termination, or (2) Rent payable during the remaining months of the Term if this Lease had not been terminated, plus (y) the amount of Rent accrued and unpaid at the time of termination, less (z) the amount of any recovery by Landlord under the foregoing provisions of this Section 20.3 up to the time of payment of such liquidated damages; Tenant hereby acknowledging that the damages which Landlord may suffer as the result of the termination of this Lease as a result of an Event of Default over cannot be determined as of the Execution Date.

(f) Landlord shall use reasonable efforts to mitigate its damages in the event of a termination of this Lease by reason of any Event of Default hereunder, however Landlord's obligation to relet the Premises shall be subject to the reasonable requirements of Landlord to lease other available space for comparable use prior to reletting the Premises and to lease to high quality tenants in a harmonious manner with an appropriate mix of uses, tenants, floor areas and terms of tenancies, and the like.

20.4. Landlord's Self-Help; Fees and Expenses. If Tenant shall default in the performance of any covenant on Tenant's part to be performed in this Lease contained, including without limitation the obligation to maintain the Premises in the required condition pursuant to Section 10.1 above, Landlord may, after the expiration of the cure periods set forth in Section 20.1 above and upon reasonable advance notice (except that in an emergency or if any such default constitutes a violation of Legal Requirements, no notice shall be required and Landlord shall not be required to wait for the expiration of such cure periods), immediately, or at any time thereafter, perform the same for the account of Tenant. Tenant shall pay to Landlord within thirty (30) days after invoicing therefor any reasonable costs incurred by Landlord in connection

therewith, together with interest at the Default Rate until paid in full. In addition, Tenant shall pay all of Landlord's reasonable costs and expenses, including without limitation reasonable attorneys' fees, incurred (i) in enforcing any obligation of Tenant under this Lease or (ii) as a result of Landlord or any of the Landlord Parties being made party to any litigation pending by or against any of the Tenant Parties.

20.5. Waiver of Redemption, Statutory Notice and Grace Periods. Tenant does hereby waive and surrender all rights and privileges which it might have under or by reason of any present or future Legal Requirements to redeem the Premises or to have a continuance of this Lease for the Term hereby demised after being dispossessed or ejected therefrom by process of law or under the terms of this Lease or after the termination of this Lease as herein provided. Except to the extent prohibited by Legal Requirements, any statutory notice and grace periods provided to Tenant by law are hereby expressly waived by Tenant.

20.6. Landlord's Remedies Not Exclusive. The specified remedies to which Landlord may resort hereunder are cumulative and are not intended to be exclusive of any remedies or means of redress to which Landlord may at any time be lawfully entitled, and Landlord may invoke any remedy (including the remedy of specific performance) allowed at law or in equity as if specific remedies were not herein provided for, in all event without prejudice to any and all remedies contained in this Lease.

20.7. No Waiver. Landlord's failure to seek redress for violation, or to insist upon the strict performance, of any covenant or condition of this Lease, or any of the Rules and Regulations promulgated hereunder, shall not prevent a subsequent act, which would have originally constituted a violation, from having all the force and effect of an original violation. The receipt by Landlord of Rent with knowledge of the breach of any covenant of this Lease shall not be deemed a waiver of such breach. The failure of Landlord to enforce any of such Rules and Regulations against Tenant and/or any other tenant in the Building shall not be deemed a waiver of any such Rules and Regulations. No provisions of this Lease shall be deemed to have been waived by either party unless such waiver be in writing signed by such party against whom a waiver is claimed. No payment by Tenant or receipt by Landlord of a lesser amount than the Rent herein stipulated shall be deemed to be other than on account of the stipulated Rent, nor shall any endorsement or statement on any check or any letter accompanying any check or payment as Rent be deemed an accord and satisfaction, and Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance of such Rent or pursue any other remedy in this Lease provided.

20.8. Restrictions on Tenant's Rights. During the continuation of any Event of Default, (a) Landlord shall not be obligated to provide Tenant with any notice pursuant to Section 2.6 above; and (b) Tenant shall not have the right to make, nor to request Landlord's consent or approval with respect to, any Alterations.

20.9. Landlord Default. Notwithstanding anything to the contrary contained in the Lease, Landlord shall in no event be in default in the performance of any of Landlord's obligations under this Lease unless Landlord shall have failed to perform such obligations within thirty (30) days (or such additional time as is reasonably required to correct any such default, provided Landlord commences cure within 30 days) after written notice by Tenant to Landlord

properly specifying wherein Landlord has failed to perform any such obligation. Tenant shall not have the right to terminate or cancel this Lease or to withhold rent or to set-off or deduct any claim or damages against rent as a result of any default by Landlord or breach by Landlord of its covenants or any warranties or promises hereunder, except in the case of a wrongful eviction of Tenant from the Premises (constructive or actual) by Landlord, and then only if the same continues after notice to Landlord thereof and an opportunity for Landlord to cure the same as set forth above. In addition, Tenant shall not assert any right to deduct the cost of repairs or any monetary claim against Landlord from rent thereafter due and payable under this Lease.

21. SURRENDER; ABANDONED PROPERTY; HOLD-OVER

21.1. Surrender

(a) Upon the expiration or earlier termination of the Term, Tenant shall (i) peaceably quit and surrender to Landlord the Premises (including without limitation all lab benches, fume hoods, electric, plumbing, heating and sprinkling systems, fixtures and outlets, vaults, paneling, molding, shelving, radiator enclosures, cork, rubber, linoleum and composition floors, ventilating, silencing, air conditioning and cooling equipment therein) broom clean, in good order, repair and condition, excepting only ordinary wear and tear and damage by fire or other Casualty; (ii) remove all of Tenant's Property (including without limitation all cabling, Tenant's Rooftop Equipment and all autoclaves and cage washers) and, to the extent specified by Landlord in accordance with Section 11.1 above, Alterations made by Tenant; and (iii) repair any damages to the Premises or the Building caused by the installation or removal of Tenant's Property and/or such Alterations. Tenant's obligations under this Section 21.1(a) shall survive the expiration or earlier termination of this Lease.

(b) Prior to the expiration of this Lease (or within thirty (30) days after any earlier termination), Tenant shall clean and otherwise decommission all interior surfaces (including floors, walls, ceilings, and counters), piping, supply lines, waste lines, acid neutralization systems and plumbing in and/or exclusively serving the Premises, and all exhaust or other ductwork in and/or exclusively serving the Premises, in each case which has carried or released or been contacted by any Hazardous Materials or other chemical or biological materials used in the operation of the Premises, and shall otherwise clean the Premises so as to permit the Surrender Plan (defined below) to be issued. At least thirty (30) days prior to the expiration of the Term (or, if applicable, within five (5) business days after any earlier termination of this Lease), Tenant shall deliver to Landlord a narrative description prepared by a third-party provider reasonably acceptable to Landlord of the actions proposed (or required by any Legal Requirements) to be taken by Tenant in order to render the Premises (including, without limitation, floors, walls, ceilings, counters, piping, supply lines, waste lines and plumbing in or serving the Premises and all exhaust or other ductwork in or serving the Premises) free of Hazardous Materials and otherwise released for unrestricted use and occupancy including without limitation causing the Premises to be decommissioned in accordance with the regulations of the U.S. Nuclear Regulatory Commission and/or the Massachusetts Department of Public Health (the MDPH) for the control of radiation and cause the Premises to be released for unrestricted use by the Radiation Control Program of the MDPH (the "**Surrender Plan**"). The Surrender Plan shall be prepared so that, following its implementation, all exhaust and other duct work in the Premises may be reused by a subsequent tenant or disposed of in conformance with

all applicable Environmental Laws without incurring special costs on account of any Hazardous Materials or undertaking special procedures for demolition, disposal, investigation, assessment, cleaning or removal of such Hazardous Materials or needing to give notice in connection with such Hazardous Materials. The Surrender Plan (i) shall be accompanied by a current list of (A) all local, state and federal licenses, registrations, permits and approvals held by or on behalf of any Tenant Party with respect to Hazardous Materials in, on, under, at or about the Premises, and (B) Tenant's Hazardous Materials, and (ii) shall be subject to the review and approval of Landlord's environmental consultant. In connection with review and approval of the Surrender Plan, upon request of Landlord, Tenant shall deliver to Landlord or its consultant such additional non-proprietary information concerning the use of and operations within the Premises as Landlord shall reasonably request. On or before the expiration of the Term (or within thirty (30) days after any earlier termination of this Lease, during which period Tenant's use and occupancy of the Premises shall be governed by Section 21.3 below), Tenant shall (i) perform or cause to be performed all actions described in the approved Surrender Plan, and (ii) deliver to Landlord a certification from a third party certified industrial hygienist reasonably acceptable to Landlord certifying that the Premises do not contain any Hazardous Materials and evidence that the approved Surrender Plan shall have been satisfactorily completed by a contractor acceptable to Landlord (the "**Decommissioning Closure Report**"), and the Decommissioning Closure Report shall also include reasonable detail concerning the clean up measures taken, the clean up locations, the tests run, and the analytic results. Landlord shall have the right, subject to reimbursement at Tenant's expense, to cause Landlord's environmental consultant to inspect the Premises and perform such additional procedures as may be deemed reasonably necessary to confirm that the Premises are, as of the expiration of the Term (or, if applicable, the date which is thirty (30) days after any earlier termination of this Lease), free of Hazardous Materials and otherwise available for unrestricted use and occupancy as aforesaid. Landlord shall have the unrestricted right to deliver the Surrender Plan, the Decommissioning Closure Report and any report by Landlord's environmental consultant with respect to the surrender of the Premises to third parties subject to the requirement that such parties execute a commercially reasonable confidentiality agreement with respect thereto. Such third parties and the Landlord Parties shall be entitled to rely on the Decommissioning Closure Report. If Tenant shall fail to prepare a Surrender Plan or submit a Decommissioning Closure Report based on the Surrender Plan approved by Landlord, or if Tenant shall fail to complete the approved Surrender Plan, or if such Surrender Plan, whether or not approved by Landlord, shall fail to adequately address the use of Hazardous Materials by any of the Tenant Parties in, on, at, under or about the Premises, (A) Landlord shall have the right to take any such actions as Landlord may deem reasonable or appropriate to assure that the Premises and the Property are surrendered in the condition required hereunder, the cost of which actions shall be reimbursed by Tenant as additional rent upon demand; and (B) if the Term shall have ended, unless and until Landlord elects to take such actions to assure that the Premises are surrendered in the condition required hereunder, Tenant shall be deemed to be a holdover tenant subject to the provisions of Section 21.3 below until the date on which Tenant delivers the Decommissioning Closure Report (in the form required hereunder) to Landlord. Tenant's obligations under this Section 21.1(b) shall survive the expiration or earlier termination of this Lease.

(c) No act or thing done by Landlord during the Term shall be deemed an acceptance of a surrender of the Premises, and no agreement to accept such surrender shall be valid, unless in writing signed by Landlord. Unless otherwise agreed by the parties in writing, no

employee of Landlord or of Landlord's agents shall have any power to accept the keys of the Premises prior to the expiration or earlier termination of this Lease. The delivery of keys to any employee of Landlord or of Landlord's agents shall not operate as a termination of this Lease or a surrender of the Premises.

(d) Notwithstanding anything to the contrary contained herein, Tenant shall, at its sole cost and expense, remove from the Premises, prior to the end of the Term, any item installed by or for Tenant and which, pursuant to Legal Requirements, must be removed therefrom before the Premises may be used by a subsequent tenant.

(e) Tenant hereby assigns to Landlord any warranties in effect on the last day of the Term with respect to any fixtures and Alterations remaining in the Premises. Tenant shall provide Landlord with copies of any such warranties prior to the expiration of the Term (or, if the Lease is earlier terminated, within five (5) days thereafter).

21.2. Abandoned Property. After the expiration or earlier termination hereof, if Tenant fails to remove any property from the Building or the Premises which Tenant is obligated by the terms of this Lease to remove within five (5) business days after written notice from Landlord, such property (the "**Abandoned Property**") shall be conclusively deemed to have been abandoned, and may either be retained by Landlord as its property or sold or otherwise disposed of in such manner as Landlord may see fit. If any item of Abandoned Property shall be sold, Tenant hereby agrees that Landlord may receive and retain the proceeds of such sale and apply the same, at its option, to the expenses of the sale, the cost of moving and storage, any damages to which Landlord may be entitled under Article 20 hereof or pursuant to law, and to any arrears of Rent.

21.3. Holdover. If any of the Tenant Parties holds over after the end of the Term, Tenant shall be deemed a tenant-at-sufferance subject to the provisions of this Lease; provided that whether or not Landlord has previously accepted payments of Rent from Tenant, (i) Tenant shall pay Base Rent at 150% of the highest rate of Base Rent payable during the Term for the first sixty (60) days of holdover and 200% thereafter, (ii) Tenant shall continue to pay to Landlord all additional rent, and (iii) if such holdover persists for more than thirty (30) days, Tenant shall be liable for all damages, including without limitation lost business and consequential damages, incurred by Landlord as a result of such holding over, Tenant hereby acknowledging that Landlord may need the Premises after the end of the Term for other tenants and that the damages which Landlord may suffer as the result of Tenant's holding over cannot be determined as of the Execution Date. If Tenant holds over in less than all of the Premises the provisions of this Section 21.3 shall apply only to the floor(s) on which Tenant is holding over unless Landlord has a replacement tenant for more than one floor including the floor(s) on which Tenant is holding over, in which event the provisions of this Section 21.3 shall apply to the floors of the Premises to be leased to such replacement tenant. Nothing contained herein shall grant Tenant the right to holdover after the expiration or earlier termination of the Term. Nothing herein shall in any way affect Tenant's status as a tenant-at-sufferance during any holdover period.

22. SUBORDINATION; MORTGAGES AND MASTER LEASE.

22.1. Subordination. Subject to the execution of a commercially reasonable subordination, non-disturbance and attornment agreement, Tenant's rights and interests under this Lease shall be (i) subject and subordinate to any existing or future ground or master lease and to any mortgages, deeds of trust, overleases, or similar instruments covering the Premises, the Building and/or the Land or any portion thereof or Landlord's interest therein and to all advances, modifications, renewals, replacements, and extensions thereof (each of the foregoing, a "**Mortgage**"), or (ii) if any Mortgagee elects, prior to the lien of any present or future Mortgage. Tenant further shall attorn to and recognize any successor landlord, whether through foreclosure or otherwise, as if the successor landlord were the originally named landlord. The provisions of this Section 22.1 shall be self-operative and no further instrument shall be required to effect such subordination or attornment; however, Tenant agrees to execute, acknowledge and deliver such instruments, confirming such subordination and attornment in such form as shall be requested by any such holder within ten (10) business days of request therefor.

22.2. Mortgagee Notices. Tenant shall give each Mortgagee of which it has notice the same notices given to Landlord concurrently with the notice to Landlord, and each Mortgagee shall have a reasonable opportunity to cure a Landlord default after the expiration of Landlord's applicable notice and/or cure periods if Landlord fails to do so. and Mortgagee's curing of any of Landlord's default shall be treated as performance by Landlord.

22.3. Mortgagee Liability. Tenant acknowledges and agrees that if any Mortgage shall be foreclosed, (a) the liability of the Mortgagee and its successors and assigns shall exist only so long as such Mortgagee or purchaser is the owner of the Premises, and such liability shall not continue or survive after further transfer of ownership; and (b) such Mortgagee and its successors or assigns shall not be (i) liable for any act or omission of any prior lessor under this Lease; (ii) liable for the performance of Landlord's covenants pursuant to the provisions of this Lease which arise and accrue prior to such entity succeeding to the interest of Landlord under this Lease or acquiring such right to possession; (iii) subject to any offsets or defense which Tenant may have at any time against Landlord; (iv) bound by any base rent or other sum which Tenant may have paid previously for more than one (1) month; or (v) liable for the performance of any covenant of Landlord under this Lease which is capable of performance only by the original Landlord.

22.4. Mortgagee Consent. Tenant acknowledges that, where applicable, any consent or approval hereafter given by Landlord may be subject to the further consent or approval of a Mortgagee; and the failure or refusal of such Mortgagee to give such consent or approval shall, notwithstanding anything to the contrary in this Lease contained, constitute reasonable justification for Landlord's withholding its consent or approval. Subject to the terms and conditions of the Mortgage in question, Landlord shall use commercially reasonable efforts to enforce any obligation of a Mortgagee to grant its approval within the time periods, if any, specified in such Mortgage, provided, however, in no event shall Landlord be required to commence litigation in connection therewith.

22.5. Master Lease. Landlord and Tenant each hereby acknowledges and agrees that (i) Landlord has the right to master lease all or any portion of the Building, together with (or

without) all or any portion of the Land, pursuant to a commercially reasonable master lease (as the same may be amended, modified or amended and restated, the "**Master Lease**"), a notice of which shall be recorded with the Registry; (ii) simultaneously with the execution of the Master Lease, Landlord shall assign to the master tenant named therein ("**New Landlord**"), and New Landlord shall assume, all of Landlord's right, title and interest in and to this Lease, notice of which shall be recorded with the Registry (it being understood that such assignment may be referenced in the notice of lease with respect to the Master Lease, rather than in a separate document); (iii) this Lease shall be subject and subordinate to the Master Lease, provided that Fee Owner, New Landlord and Tenant enter into an agreement in substantially the form attached hereto as Exhibit 12; (iv) Tenant shall execute such reasonable documents (which may be in recordable form) evidencing the foregoing within ten (10) business days after Landlord's request. From and after the implementation of the foregoing, all references to (1) "**Landlord**" in this Lease (except in this paragraph) shall mean New Landlord (or its successor-in-interest, in accordance with Sections 25.10 and 25.11 below), and (2) "**Fee Owner**" in this Lease shall mean the landlord under the Master Lease. In the event the Master Lease relates to less than all of the Building and Land, all references herein to the "**Property**" shall mean the premises demised under the Master Lease.

23. QUIET ENJOYMENT.

Landlord covenants that so long as Tenant keeps and performs each and every covenant, agreement, term, provision and condition herein contained on the part and on behalf of Tenant to be kept and performed, Tenant shall peaceably and quietly hold, occupy and enjoy the Premises during the Term from and against the claims of all persons lawfully claiming by, through or under Landlord subject, nevertheless, to the covenants, agreements, terms, provisions and conditions of this Lease, any matters of record or of which Tenant has knowledge and to any Mortgage to which this Lease is subject and subordinate, as hereinabove set forth.

24. NOTICES.

Any notice, consent, request, bill, demand or statement hereunder (each, a "**Notice**") by either party to the other party shall be in writing and shall be deemed to have been duly given when either delivered by hand or by nationally recognized overnight courier or refused, as the case may be (in either case with evidence of delivery or refusal thereof) and addressed as follows:

If to Landlord:	Massachusetts Institute of Technology c/o MIT Investment Management Company One Broadway, 09-200 Cambridge, MA 02142 Attention: President
With copies to:	MIT Investment Management Company One Broadway, 09-200 Cambridge, MA 02142 Attention: Director of Real Estate Legal Services

and:	MIT Investment Management Company One Broadway, 09-200 Cambridge, MA 02142 Attention: Senior Vice President
and:	Goulston & Storrs PC 400 Atlantic Avenue Boston, MA 02110 Attention: Colleen P. Hussey, Esquire
and:	Jones Lang LaSalle Americas, Inc. One Broadway, 6th Floor Cambridge, MA 02142 Attention: Group Manager
With a copy by email to:	RELegal@mitimco.mit.edu
If to Tenant:	Prior to Phase 2 Term Commencement Date Beam Therapeutics, Inc. 26 Lansdowne Street 2nd Floor Cambridge, MA 02139 Attention: CEO
with a copy to:	WilmerHale 60 State Street Boston. MA 02109 Attention: Paul Jakubowski

Notwithstanding the foregoing, any notice from Landlord to Tenant regarding ordinary business operations (e.g., exercise of a right of access to the Premises, maintenance activities, invoices, etc.) may also be given by written notice delivered by facsimile or electronic mail to any person at the Premises whom Landlord reasonably believes is authorized to receive such notice on behalf of Tenant without copies as specified above. Either party may at any time change the address or specify an additional address for such Notices by delivering or mailing, as aforesaid, to the other party a notice stating the change and setting forth the changed or additional address, provided such changed or additional address is within the United States and is not a post office box. Notices shall be effective upon the date of receipt or refusal thereof. Any notice given by an attorney on behalf of Landlord shall be considered as given by Landlord and shall be fully effective. Any notice given by an attorney on behalf of Tenant shall be considered as given by Tenant and shall be fully effective.

25. MISCELLANEOUS

25.1. Separability. If any provision of this Lease or portion of such provision or the application thereof to any person or circumstance is for any reason held invalid or unenforceable, the remainder of this Lease (or the remainder of such provision) and the application thereof to other persons or circumstances shall not be affected thereby

25.2. Captions; Interpretation. The captions are inserted only as a matter of convenience and for reference, and in no way define, limit or describe the scope of this Lease nor the intent of any provisions thereof. The normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Lease or any exhibits or amendments hereto. Words of any gender used in this Lease shall be held and construed to include any other gender, and words in the singular number shall be held to include the plural, unless the context otherwise requires. Unless expressly stated otherwise, the use of the word "including" in this Lease shall be deemed to mean "including without limitation" in each instance.

25.3. Broker. Tenant and Landlord each warrants and represents that it has dealt with no broker in connection with the consummation of this Lease other than CBRE/ New England ("**Broker**"). Tenant and Landlord each agrees to defend, indemnify and save the other harmless from and against any Claims arising in breach of its representation and warranty set forth in the immediately preceding sentence. Landlord shall be solely responsible for the payment of any brokerage commissions to Broker.

25.4. Entire Agreement. This Lease, Lease Summary Sheet and Exhibits 1-12 attached hereto and incorporated herein contain the entire and only agreement between the parties and any and all statements and representations, written and oral, including previous correspondence and agreements between the parties hereto, are merged herein. Tenant acknowledges that all representations and statements upon which it relied in executing this Lease are contained herein and that Tenant in no way relied upon any other statements or representations, written or oral. This Lease may not be modified orally or in any manner other than by written agreement signed by the parties hereto, provided that no amendment or modification may be effected by text message, electronic mail or similar communication. Each reference in this Lease to any of the terms and titles contained in any Exhibit attached to this Lease shall be deemed and construed to incorporate the data stated under that term or title in such Exhibit. All capitalized terms not otherwise defined herein shall have the meanings ascribed to them as set forth in the Lease Summary Sheet which is attached hereto and incorporated herein by reference.

25.5. Governing Law; Personal Jurisdiction. This Lease is made pursuant to, and shall be governed by, and construed in accordance with, the laws of the Commonwealth of Massachusetts and any applicable local municipal rules, regulations, by-laws, ordinances and the like. Any litigation relating to this Lease shall be brought in the state or federal courts in the Commonwealth of Massachusetts, and each party consents to personal jurisdiction in such courts.

25.6. Tenant Representations. Tenant hereby guarantees, warrants and represents to Landlord that (i) Tenant is duly incorporated or otherwise established or formed and validly existing under the laws of its state of incorporation, establishment or formation, (ii) Tenant has and is duly qualified to do business in the state in which the Property is located, (iii) Tenant has full corporate, partnership, trust, association or other appropriate power and authority to enter into this Lease and to perform all of Tenant's obligations hereunder, (iv) each person (and all of the persons if more than one signs) signing this Lease on behalf of Tenant is duly and validly authorized to do so; and (v) neither the execution, delivery or performance of this Lease, nor the consummation of the transactions contemplated hereby, will violate or conflict with any provision of documents or instruments under which Tenant is constituted or to which Tenant is a party.

25.7. Expenses Incurred by Landlord Upon Tenant Requests. Tenant shall, upon demand, reimburse Landlord for all reasonable expenses, including, without limitation, legal fees, incurred by Landlord in connection with all requests by Tenant for consents, approvals or execution of collateral documentation related to this Lease, including, without limitation, costs incurred by Landlord in the review and approval of Tenant's plans and specifications in connection with proposed Alterations (other than Tenant's Fitout) to be made by Tenant to the Premises or in connection with requests by Tenant for Landlord's consent to make a Transfer. Such costs shall be deemed to be additional rent under this Lease.

25.8. Survival. Without limiting any other obligation of Tenant which may survive the expiration or prior termination of the Term, all obligations on the part of Tenant to indemnify, defend, or hold Landlord harmless, as set forth in this Lease (including without limitation Sections 14.2 and 17.5 hereof) shall survive the expiration or prior termination of the Term.

25.9. Limitation of Liability. Tenant shall neither assert nor seek to enforce any claim against Landlord or any of the Landlord Parties, or the assets of any of the Landlord Parties, for breach of this Lease or otherwise, other than against Landlord's interest in the Property, and Tenant agrees to look solely to such interest for the satisfaction of any liability of Landlord under this Lease. This Section 25.9 shall not limit any right that Tenant might otherwise have to obtain injunctive relief against Landlord. Landlord and Tenant specifically agree that in no event shall any officer, director, trustee, employee or representative of Landlord or any of the other Landlord Parties ever be personally liable for any obligation under this Lease, nor shall Landlord or any of the other Landlord Parties be liable for consequential, incidental or punitive damages or for lost profits whatsoever in connection with this Lease.

25.10. Binding Effect. The covenants, agreements, terms, provisions and conditions of this Lease shall bind and benefit the successors and assigns of the parties hereto with the same effect as if mentioned in each instance where a party hereto is named or referred to, except that no violation of the provisions of Article 13 hereof shall operate to vest any rights in any successor or assignee of Tenant. A facsimile, PDF or other electronic signature on this Lease shall be equivalent to, and have the same force and effect as, an original signature.

25.11. Landlord Obligations upon Transfer. Upon any sale, transfer or other disposition of the Laboratory Addition, Landlord shall be entirely freed and relieved from the performance and observance accruing thereafter of all covenants and obligations hereunder on the part of Landlord to be performed and observed, it being understood and agreed in such event (and it shall be deemed and construed as a covenant running with the land) that the person succeeding to Landlord's ownership shall thereupon and thereafter assume, and perform and observe, any and all of such covenants and obligations of Landlord, except as otherwise agreed in writing.

25.12. Grants of Interest. Tenant shall not grant any security interest whatsoever in (a) any fixtures within the Premises or (b) any item paid in whole or in part with Landlord's Contribution without the consent of Landlord.

25.13. No Air Rights. No rights to any view or to light or air over any property, whether belonging to Landlord or any other person, are granted to Tenant by this Lease. If at any time any windows of the Premises are temporarily darkened or the light therefrom is obstructed by reason of any repairs, improvements, maintenance or cleaning in or about the Property, the same shall be without liability to Landlord and without any reduction or diminution of Tenant's obligations under this Lease.

25.14. [Intentionally omitted].

25.15. Financial Information. Tenant shall deliver to Landlord, within thirty (30) days after Landlord's reasonable request, Tenant's most recently completed balance sheet and related statements of income, shareholder's equity and cash flows statements (audited if available) reviewed by an independent certified public accountant and certified by an officer of Tenant as being true and correct in all material respects. Any such financial information may be relied upon by any actual or potential lessor, purchaser, or mortgagee of the Property or any portion thereof.

25.16. Measurements. After (a) substantial completion of restoration of the Building (or any portion thereof) after a Casualty; (b) the effective date of any Taking affecting the Property or any portion thereof, and/or (c) substantial completion of any Changes pursuant to Section 2.1 of this Lease, Landlord shall have the right to measure the Building and/or the Premises in accordance with the Building's then- current version of the Standard Method of Measurement for Office Buildings (ANSI/BOMA) (or if such standard is no longer in use, using an industry-standard method of measurement reasonably selected by Landlord) and to make an appropriate adjustment to Base Rent, Tenant's Share and Tenant's Tax Share. Tenant shall execute an agreement confirming such measurements and adjustments within ten (10) business days after Landlord's request therefor. Tenant's failure to execute and return any such agreement proposed by Landlord, or to provide written objection to the statements contained therein, within ten (10) business days after the date of Tenant's receipt thereof, shall be deemed an approval by Tenant of Landlord's determination of such figures as set forth therein.

25.17. OFAC. Tenant warrants and represents, as of the date hereof and throughout the Term, that it is not owned or controlled, directly or indirectly, by any person or government from countries or other areas that are subject to economic, trade, sectoral, or transactional sanctions imposed by the United States Government, and that neither Tenant nor any of its owners, directors, officers or group companies appears on any lists of known or suspected terrorists, terrorist organizations or other prohibited persons made publicly available or published by any agency of the government of the United States or any other jurisdiction in which Tenant is doing business, including but not limited to the List of Specially Designated Nationals and Blocked Persons maintained by the Office of Foreign Assets Control of the U.S. Department of the Treasury. Tenant shall notify Landlord immediately if these circumstances change.

25.18. Confidentiality.

(a) Lease Terms. Tenant acknowledges and agrees that the terms of this Lease are confidential. Disclosure of the terms hereof could adversely affect the ability of Landlord to negotiate other leases with respect to the Building and may impair Landlord's relationship with other tenants of the Building. Tenant agrees that it and its partners, officers, directors,

employees, brokers, and attorneys, if any, shall not disclose the terms and conditions of this Lease to any other person or entity without the prior written consent of Landlord, which may be given or withheld by Landlord, in Landlord's sole discretion, except as required for financial disclosures or securities filings, as required by the order of any court or public body with authority over Tenant, in connection with prospective assignments and subleases in connection with prospective investments in Tenant or mergers or similar transactions involving Tenant or in connection with any litigation between Landlord and Tenant with respect to this Lease. It is understood and agreed that damages alone would be an inadequate remedy for the breach of this provision by Tenant, and Landlord shall also have the right to seek specific performance of this provision and to seek injunctive relief to prevent its breach or continued breach. Landlord and Tenant agree that no press or other publication release or communication to the general public concerning this Lease will be issued without the other party's prior written approval.

(b) Landlord's Proprietary Information. In connection with this Lease, Landlord has delivered and/or will deliver to Tenant from time to time certain information about the Property, which may include, without limitation, master leases, environmental reports and other title, zoning, geotechnical, permitting, environmental and operational materials relating to the Property (such information whether furnished before or after the Execution Date, whether oral or written, and regardless of the manner in which it is furnished, is collectively hereinafter referred to as the "**Landlord's Proprietary Information**"). Landlord's Proprietary Information does not include, however, information which (1) is or becomes generally available to the public other than as a result of a disclosure in violation of this Section 25.18 by Tenant or Tenant's Engaged Persons; (2) was available to Tenant on a non-confidential basis prior to its disclosure by Landlord; (3) becomes available to Tenant on a non-confidential basis from a person other than Landlord who is not to the knowledge of Tenant or Tenant's Engaged Persons otherwise bound by a confidentiality agreement with Landlord, or is otherwise not under an obligation to Landlord not to transmit the information to Tenant; or (4) is independently developed by Tenant without the use of any Landlord's Proprietary Information.

(i) Tenant hereby covenants and agrees, using a reasonable degree of care: (A) to keep all Landlord's Proprietary Information confidential in accordance herewith; (B) not to disclose or reveal any Landlord's Proprietary Information to any person other than Tenant's Engaged Persons; (C) to cause Tenant's Engaged Persons to observe the terms of this Section 25.18(b); and (D) not to use any Landlord's Proprietary Information for any purpose other than in connection with the Lease. "**Tenant's Engaged Persons**" shall mean those persons, including without limitation Tenant's employees, agents, consultants, attorneys, accountants and representatives, whose duties and responsibilities reasonably require that Landlord's Proprietary Information be disclosed to them in connection with this Lease.

(ii) In the event that Tenant is requested pursuant to, or required by, applicable law or regulation or by legal process to disclose any Landlord's Proprietary Information, Tenant agrees that it will make reasonable efforts to provide Landlord with reasonable notice of such request or requirement in order to enable Landlord to seek an appropriate protective order or other remedy, to resist or narrow the scope of such request or legal process, or to waive compliance, in whole or in part, with the terms of this Section 25.18. In any such event Tenant will use reasonable efforts under the circumstances in which disclosure is sought to ensure that all Landlord's Proprietary Information and other information that is so

disclosed will be accorded confidential treatment by the entity compelling such disclosure and Landlord shall respond in such a time and manner that does not put Tenant or any of Tenant's Engaged Persons at risk of violation of such law or regulation or legal process.

(iii) Without prejudice to the rights and remedies otherwise available at law or in equity, Tenant agrees that Landlord shall be entitled to seek equitable relief by way of injunction or otherwise if Tenant or any of Tenant's Engaged Persons breach or reasonably threaten to breach any of the provisions of this Section 25.18(b).

(c) In connection with this Lease, from time to time Tenant has delivered and/or will deliver to Landlord and the Landlord Parties may observe or have the opportunity to review, certain information about Tenant and/or its affiliates, including but not limited to financial information and other information related to the business operations of Tenant and/or its affiliates (such information whether furnished, observed, or reviewed before or after the Execution Date, whether oral, written, or visual, and regardless of the manner in which it is furnished, observed or reviewed, is collectively hereinafter referred to as "**Tenant's Proprietary Information**"). Tenant's Proprietary Information does not include, however, information which (1) is or becomes generally available to the public other than as a result of a disclosure in violation of this Section 25.18(c) by Landlord or Landlord's Engaged Persons; (2) was available to Landlord on a non-confidential basis prior to its disclosure by Tenant; (3) becomes available to Landlord on a non-confidential basis from a person other than Tenant who is not to the knowledge of Landlord or Landlord's Engaged Persons otherwise bound by a confidentiality agreement with Tenant, or is otherwise not under an obligation to Tenant not to transmit the information to Landlord; or (4) is independently developed by Landlord without the use of any Tenant's Proprietary Information. Nothing in this Section 25.18 shall be construed to require Tenant to deliver any information about Tenant and/or its affiliates, including but not limited to financial information and other information related to the business operations of Tenant and/or its affiliates unless expressly required pursuant to this Lease or reasonably necessary for Landlord to comply with any Legal Requirements.

(i) Landlord hereby covenants and agrees, using a reasonable degree of care: (A) to keep all Tenant's Proprietary Information confidential in accordance herewith; (B) not to disclose or reveal any Tenant's Proprietary Information to any person other than Landlord's Engaged Persons; (C) to cause Landlord's Engaged Persons to observe the terms of this Section 25.18(c); and (D) not to use any Tenant's Proprietary Information for any purpose other than in connection with the ownership, financing, and/or sale of any of Landlord's interest in and to the Property or any portion thereof including the Premises. "**Landlord's Engaged Persons**" shall mean those persons, including without limitation Landlord's or its affiliates' actual or prospective lenders, investors and purchasers and the brokers, appraisers, employees, agents, consultants, attorneys, accountants and representatives thereof or of Landlord or its affiliates, whose duties and responsibilities reasonably require that Tenant's Proprietary Information be disclosed to them in connection with the ownership, management, insurance, maintenance, repair, operation, financing, and/or sale of any of Landlord's interest in and to the Property or any portion thereof including the Premises.

(ii) In the event that Landlord is requested pursuant to, or required by, applicable law or regulation or by legal process to disclose any Tenant's Proprietary Information,

Landlord agrees that it will make reasonable efforts to provide Tenant with reasonable notice of such request or requirement in order to enable Tenant to seek an appropriate protective order or other remedy, to resist or narrow the scope of such request or legal process, or to waive compliance, in whole or in part, with the terms of this Section 25.18(c). In any such event Landlord will use reasonable efforts under the circumstances in which disclosure is sought to ensure that all Tenant's Proprietary Information will be accorded confidential treatment by the entity compelling such disclosure and Tenant shall respond in such a time and manner that does not put Landlord or any of its Engaged Persons at risk of violation of such law or regulation or legal process.

(iii) Without prejudice to the rights and remedies otherwise available at law or in equity, Landlord agrees that Tenant shall be entitled to seek equitable relief by way of injunction or otherwise if Landlord or any of Landlord's Engaged Persons breach or reasonably threaten to breach any of the provisions of this Section 25.18(c).

(d) Tenant will be responsible for any breach of the terms of this Section 25.18 by it and/or Tenant's Engaged Persons. Landlord will be responsible for any breach of the terms of this Section 25.18 by it and/or Landlord's Engaged Persons.

(e) No failure or delay in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any right, power or privilege hereunder.

The obligations of the parties under this Section 25.18 shall survive the expiration or prior termination of the Term for one (1) year.

25.19. Security. Tenant acknowledges that security devices and services, if any, while intended to deter crime, may not in given instances prevent theft or other criminal acts. Landlord shall not be liable for injuries or losses caused by criminal acts of third parties, and Tenant assumes the risk that any security device or service may malfunction or otherwise be circumvented by a criminal. If Tenant desires protection against such criminal acts, then Tenant shall, at Tenant's sole cost and expense, obtain appropriate insurance coverage. Tenant's security programs and equipment for the Premises shall be coordinated with Landlord and subject to Landlord's reasonable approval.

25.20. Time. Time is of the essence as to the performance of Tenant's obligations under this Lease. Except as expressly set forth herein, any time period which ends on a non-business day shall be extended to the first subsequent business day.

25.21. WAIVER OF JURY TRIAL. TENANT AND LANDLORD WAIVE ANY RIGHT TO TRIAL BY JURY OR TO HAVE A JURY PARTICIPATE IN RESOLVING ANY DISPUTE, WHETHER SOUNDING IN CONTRACT, TORT, OR OTHERWISE, BETWEEN LANDLORD AND TENANT ARISING OUT OF THIS LEASE OR ANY OTHER INSTRUMENT, DOCUMENT, OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HEREWITH OR THE TRANSACTIONS RELATED HERETO.

25.22. Bankruptcy. In the event a debtor, trustee or debtor in possession under the Bankruptcy Code, or another person with similar rights, duties and powers under any other Legal

Requirements, proposes to cure any Tenant default under this Lease or to assume or assign Tenant's interest under this Lease, and is obliged to provide adequate assurance to Landlord that (a) a default shall be cured, (b) Landlord shall be compensated for its damages arising from any breach of this Lease, and (c) future performance of Tenant's obligations under this Lease shall occur, then such adequate assurances shall include any or all of the following, as designated by Landlord in its sole and absolute discretion: (i) those acts specified in the Bankruptcy Code or other Legal Requirements as included within the meaning of "adequate assurance," even if this Lease does not concern a shopping center or other facility described in such Legal Requirements; (ii) a prompt cash payment to compensate Landlord for any monetary defaults or actual damages arising directly from a breach of this Lease; (iii) a cash deposit in an amount at least equal to the then-current amount of the Letter of Credit; or (iv) the assumption or assignment of all of Tenant's interest and obligations under this Lease.

25.23. Not Binding Until Executed. This Lease shall have no binding force or effect, shall not constitute an offer or an option for the leasing of the Premises, nor confer any right or impose any obligations upon either party until execution and delivery of this Lease by both parties.

25.24. Office of Workforce Development. Tenant hereby covenants and agrees that it shall notify the City of Cambridge Office of Workforce Development of all new job opportunities in the Premises as they become available.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF the parties hereto have executed this Lease as of the Execution Date.

LANDLORD

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

By: /s/ Seth Alexander
Name: Seth Alexander, Authorized Signatory, and not individually as President of MIT Investment Management Company

TENANT

BEAM THERAPEUTICS INC.

By: /s/ Giuseppe Ciaramella
Name: Giuseppe Ciaramella
Title: Chief Scientific Officer

EXHIBIT 1

LEGAL DESCRIPTION

A certain parcel of land situated in the City of Cambridge, Middlesex County, and Commonwealth of Massachusetts, bounded and described as follows:

Beginning at a point at the intersection of the southerly sideline of Main Street and the westerly sideline of Wadsworth Street;

Thence running S05°30’09”W by the westerly sideline of Wadsworth Street, a distance of 279.34 feet to a point;

Thence turning and running N84°29’51”W by Lot 3B. a distance of 215.91 feet to a point on the easterly sideline of a private way known as Hayward Street;

Thence turning and running N05°30’09”E by the easterly sideline of a private way known as Hay ward Street, a distance of 282.61 feet to a point on the southerly sideline of Main Street;

Thence turning and running S84°29’51”E a distance of 158.80 feet to a point of curvature;

Thence running along a curve to the right with a radius of 500.00 feet and an arc length of 57.23 feet to the point of beginning.

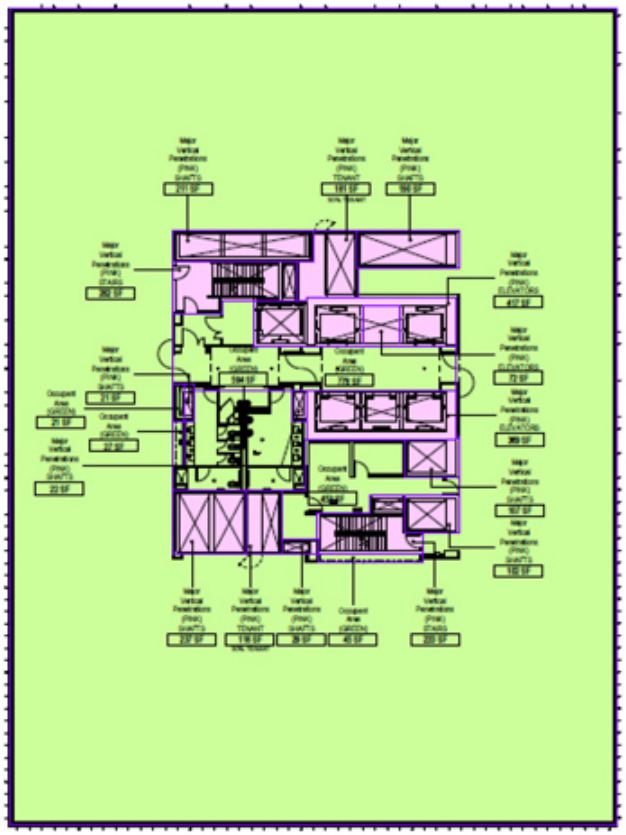
Containing 60.954 square feet, more or less.

A portion of the above-described parcel is registered land, which is depicted as the registered parcel on Land Court Plan No. 23568A, and described in Transfer Certificate of Title No. 105748. filed with the Middlesex Registry District of the Land Court in Book 658, at Page 198.

For title, see Deed dated March 6, 1962 and recorded with the Middlesex South Registry of Deeds in Book 9995, Page 432 and Deed dated September 15, 1961 and filed with the Middlesex South Registry District of the Land Court as Document No. 370630 creating Certificate of Title 10574.

EXHIBIT 2A

LEASE PLAN



238 MAIN ST

SHARED 20% GARAGE
20% 238 MAIN ST
60% ADDITION

SHARED 80.39%
ADDITION
19.61% 238 MAIN ST

POTENTIAL TENANT
MECHANICAL SPACE

EXCLUDED AREA
(GARAGE)

EXCLUDED AREA
(RETAIL)

OCCUPANT AREA

MAJOR VERTICAL
PENETRATIONS

FLOOR SERVICE AREA

BUILDING SERVICE AREA

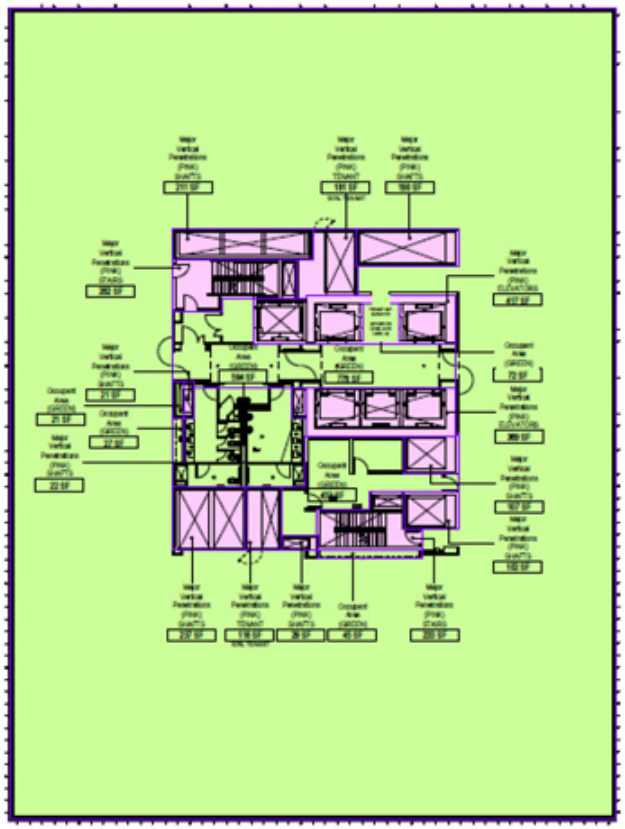
ROOF TERRACE

238 MAIN STREET LABORATORY ADDITION
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

BEAM PREMISES PLAN - LEVEL 7

PERKINS+WILL

4/17/2019



238 MAIN ST

SHARED 20% GARAGE
20% 238 MAIN ST
60% ADDITION

SHARED 80.39%
ADDITION
19.61% 238 MAIN ST

POTENTIAL TENANT
MECHANICAL SPACE

EXCLUDED AREA
(GARAGE)

EXCLUDED AREA
(RETAIL)

OCCUPANT AREA

MAJOR VERTICAL
PENETRATIONS

FLOOR SERVICE AREA

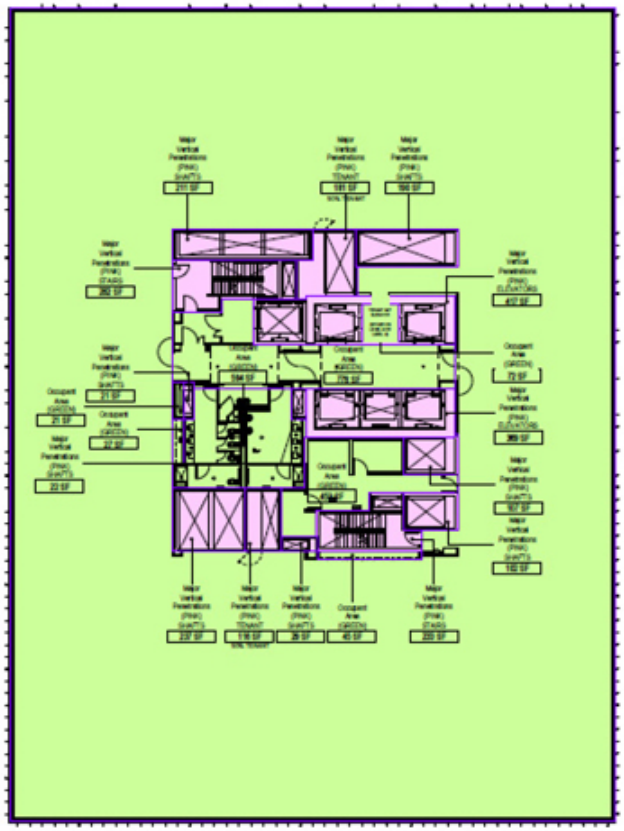
BUILDING SERVICE AREA

ROOF TERRACE

238 MAIN STREET LABORATORY ADDITION
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

BEAM PREMISES PLAN - LEVEL 8

PERKINS+WILL
4/17/2019



238 MAIN ST

SHARED 20% GARAGE
20% 238 MAIN ST
60% ADDITION

SHARED 80.39%
ADDITION
19.61% 238 MAIN ST

POTENTIAL TENANT
MECHANICAL SPACE

EXCLUDED AREA
(GARAGE)

EXCLUDED AREA
(RETAIL)

OCCUPANT AREA

MAJOR VERTICAL
PENETRATIONS

FLOOR SERVICE AREA

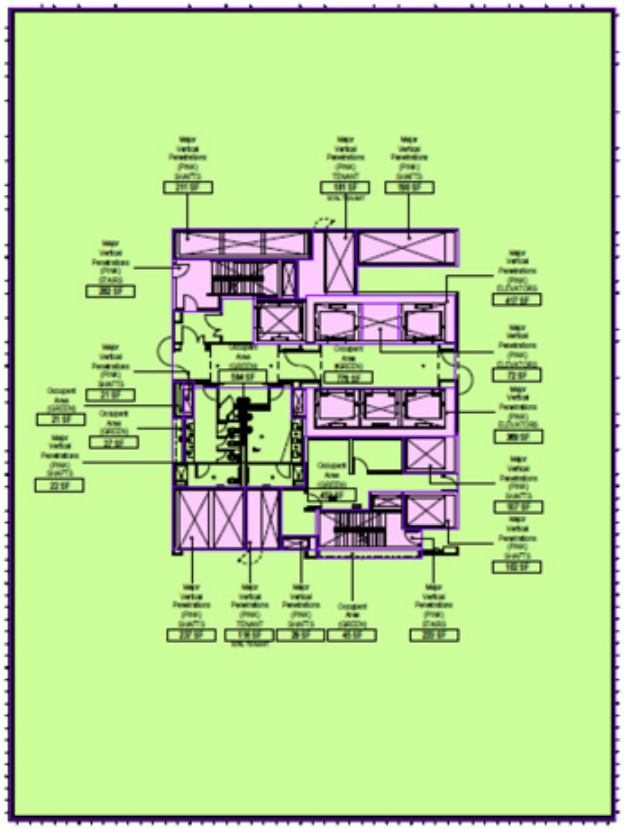
BUILDING SERVICE AREA

ROOF TERRACE

238 MAIN STREET LABORATORY ADDITION
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

BEAM PREMISES PLAN - LEVEL 9

PERKINS+WILL
4/17/2019



238 MAIN ST

SHARED 20% GARAGE
20% 238 MAIN ST
60% ADDITION

SHARED 80.39%
ADDITION
19.61% 238 MAIN ST

POTENTIAL TENANT
MECHANICAL SPACE

EXCLUDED AREA
(GARAGE)

EXCLUDED AREA
(RETAIL)

OCCUPANT AREA

MAJOR VERTICAL
PENETRATIONS

FLOOR SERVICE AREA

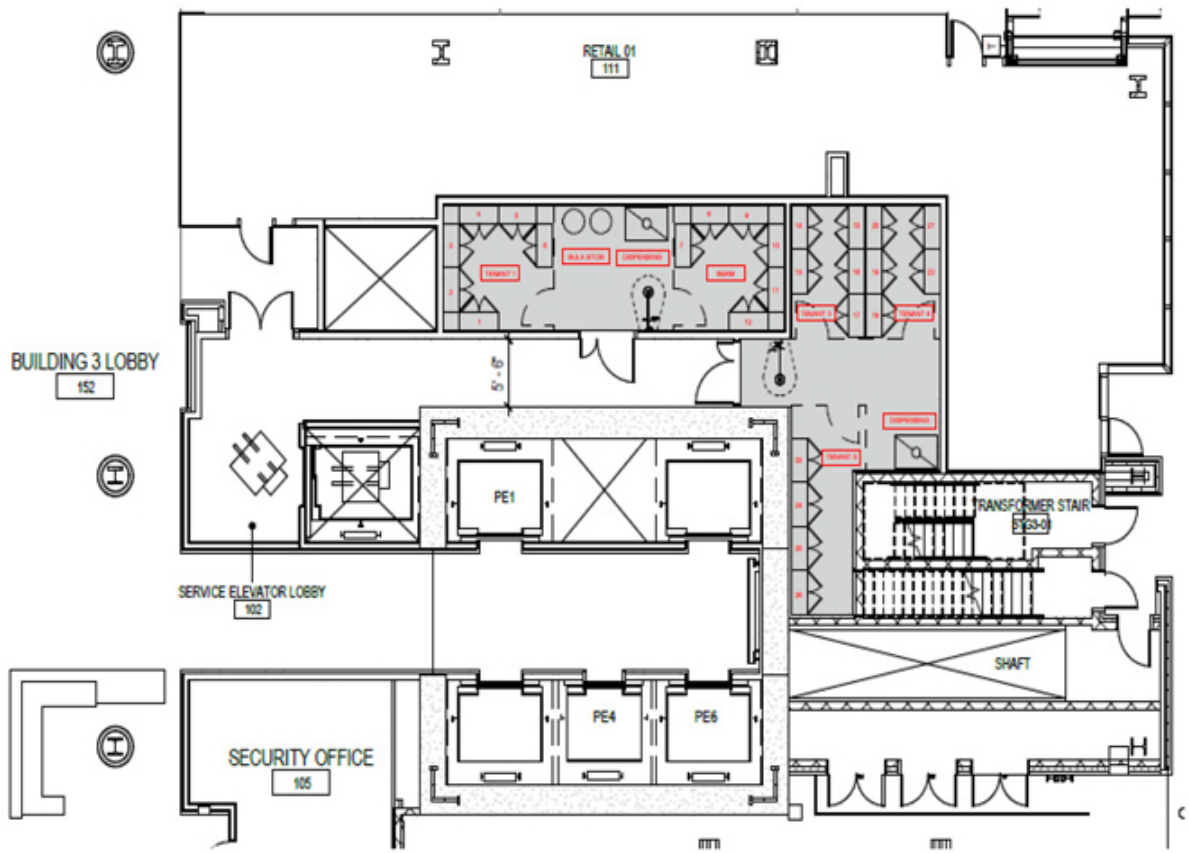
BUILDING SERVICE AREA

ROOF TERRACE

238 MAIN STREET LABORATORY ADDITION
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

BEAM PREMISES PLAN - LEVEL 10

PERKINS+WILL
4/17/2019



SECURED SPACE (CABINETS IN CAGES) - CONFIGURED FOR 5 TENANTS	
SPACE	# CABINETS
TENANT 1	6
TENANT 2	6
TENANT 3	5
TENANT 4	5
TENANT 5	4
TOTAL	26

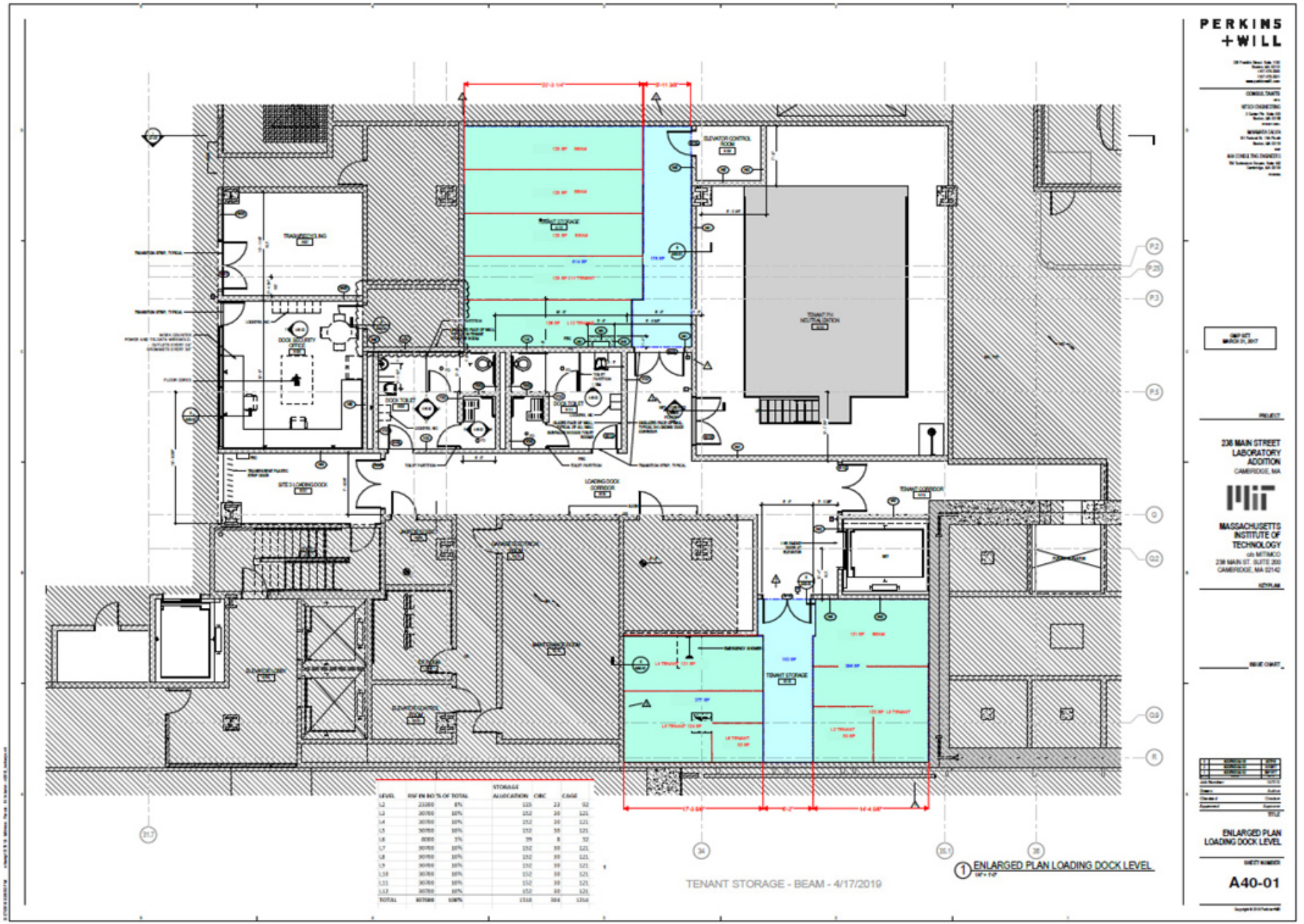
KENDALL SITE 3

CHEMICAL STORAGE - SECURED SPACE

Scale: 3/32" = 1'-0"

PERKINS+WILL

4/17/2019



LEVEL	RSF BY FLOOR	% OF TOTAL	STORAGE ALLOCATION	CIRC	CAGE
L2	23000	8%	115	23	92
L3	30700	10%	152	30	121
L4	30700	10%	152	30	121
L5	30700	10%	152	30	121
L6	8000	3%	39	8	32
L7	30700	10%	152	30	121
L8	30700	10%	152	30	121
L9	30700	10%	152	30	121
L10	30700	10%	152	30	121
L11	30700	10%	152	30	121
L12	30700	10%	152	30	121
TOTAL	307000	100%	1518	304	1214

1 ENLARGED PLAN LOADING DOCK LEVEL
1/4" = 1'-0"

PERKINS +WILL

CONSULTANTS

PROJECT

238 MAIN STREET LABORATORY ADDITION
CAMBRIDGE, MA

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
c/o MITIMCO
238 MAIN ST., SUITE 200
CAMBRIDGE, MA 02142

KEYPLAN

ISSUE CHART

1	ISSUED FOR	DATE
2	ISSUED FOR	DATE
3	ISSUED FOR	DATE

Job Number
Drawn
Checked
Approved

TITLE

ENLARGED PLAN LOADING DOCK LEVEL

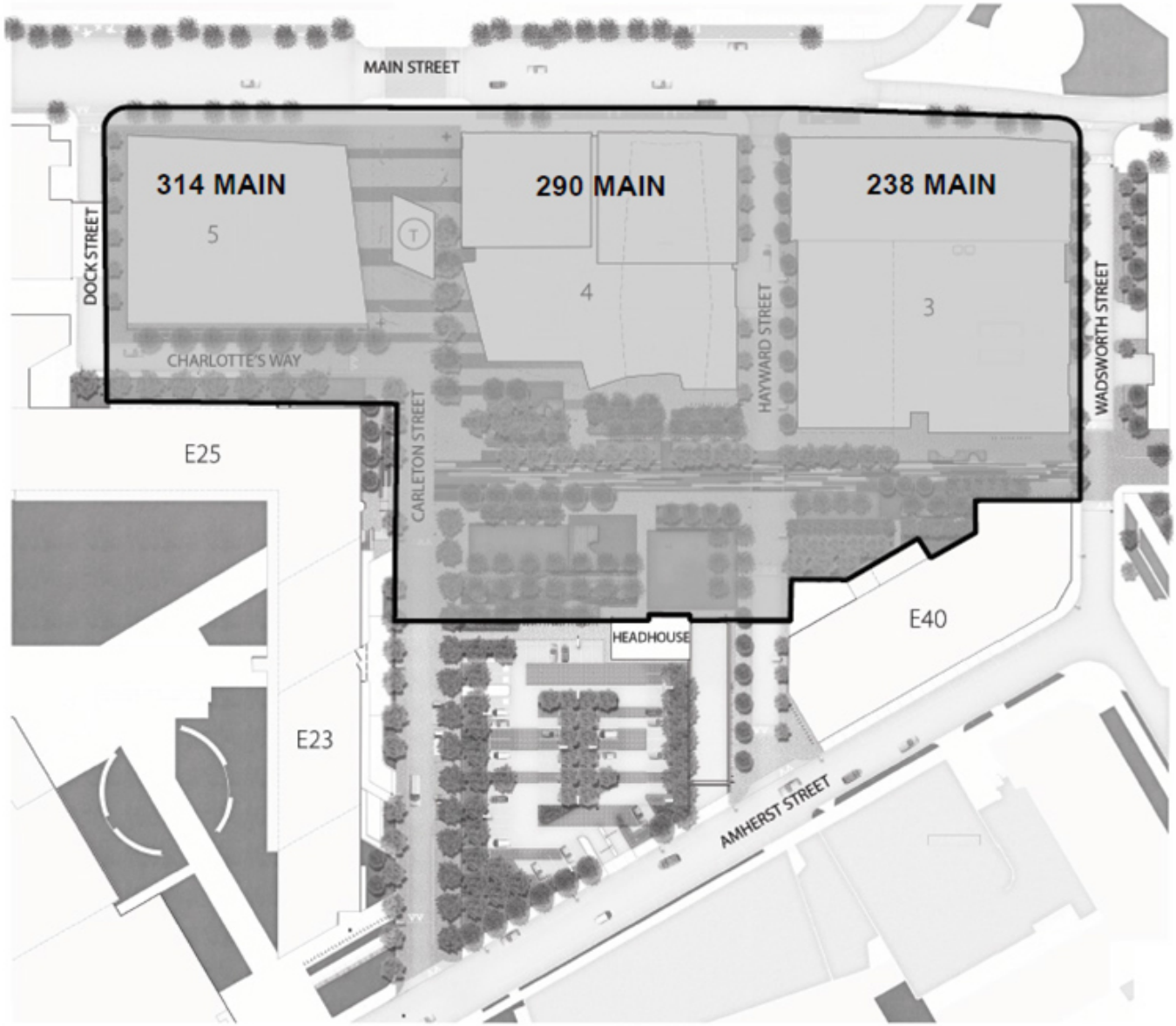
SHEET NUMBER

A40-01

EXHIBIT 2B

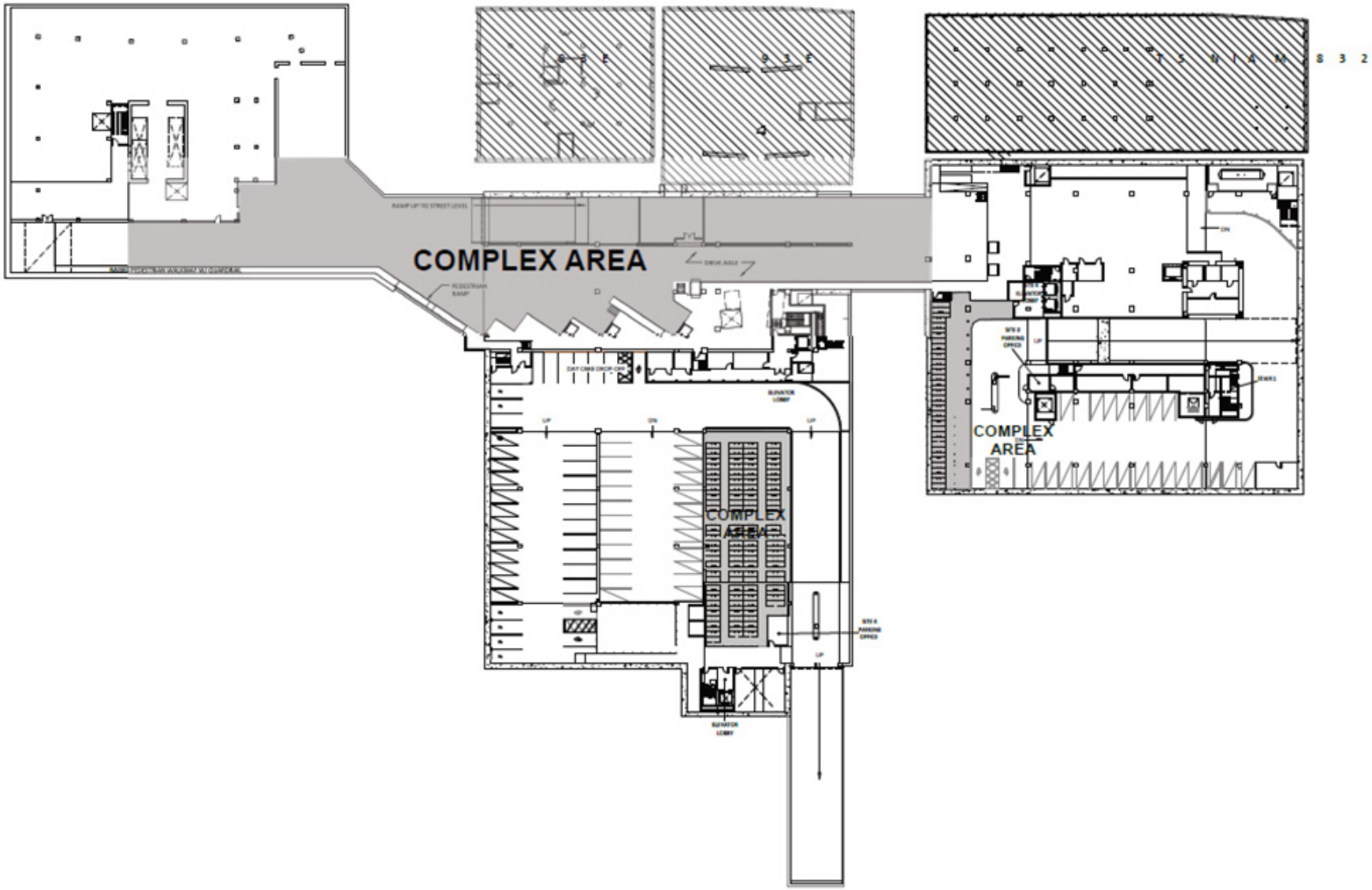
PLAN OF CERTAIN COMPLEX AREAS

EXHIBIT 2B
COMPLEX AREAS



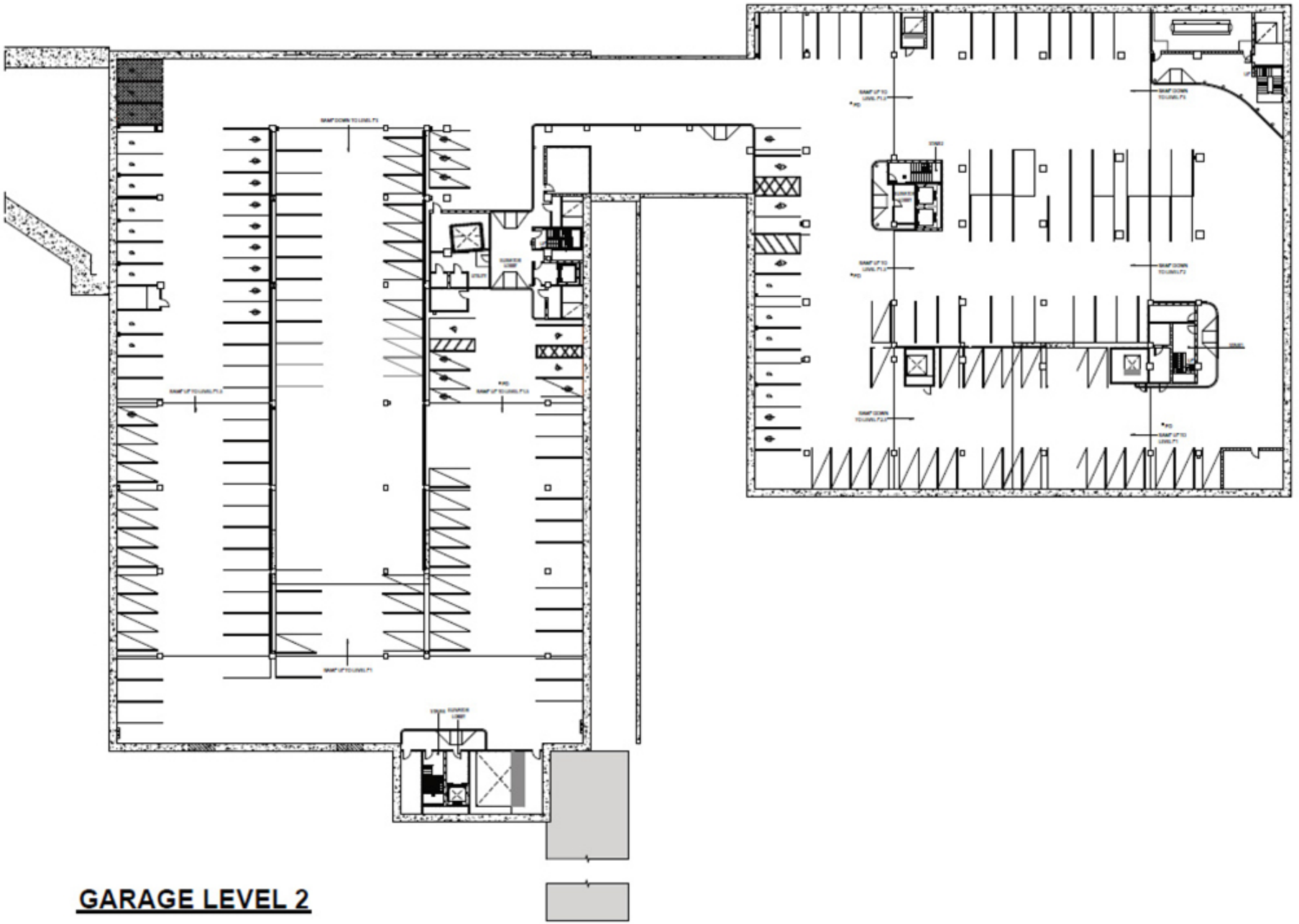
NOTE: INTERIOR SPACES OF BUILDINGS 3, 4, 5 AND THE MBTA STATION HEADHOUSE ARE NOT INCLUDED WITHIN OPEN SPACE

EXHIBIT 2B



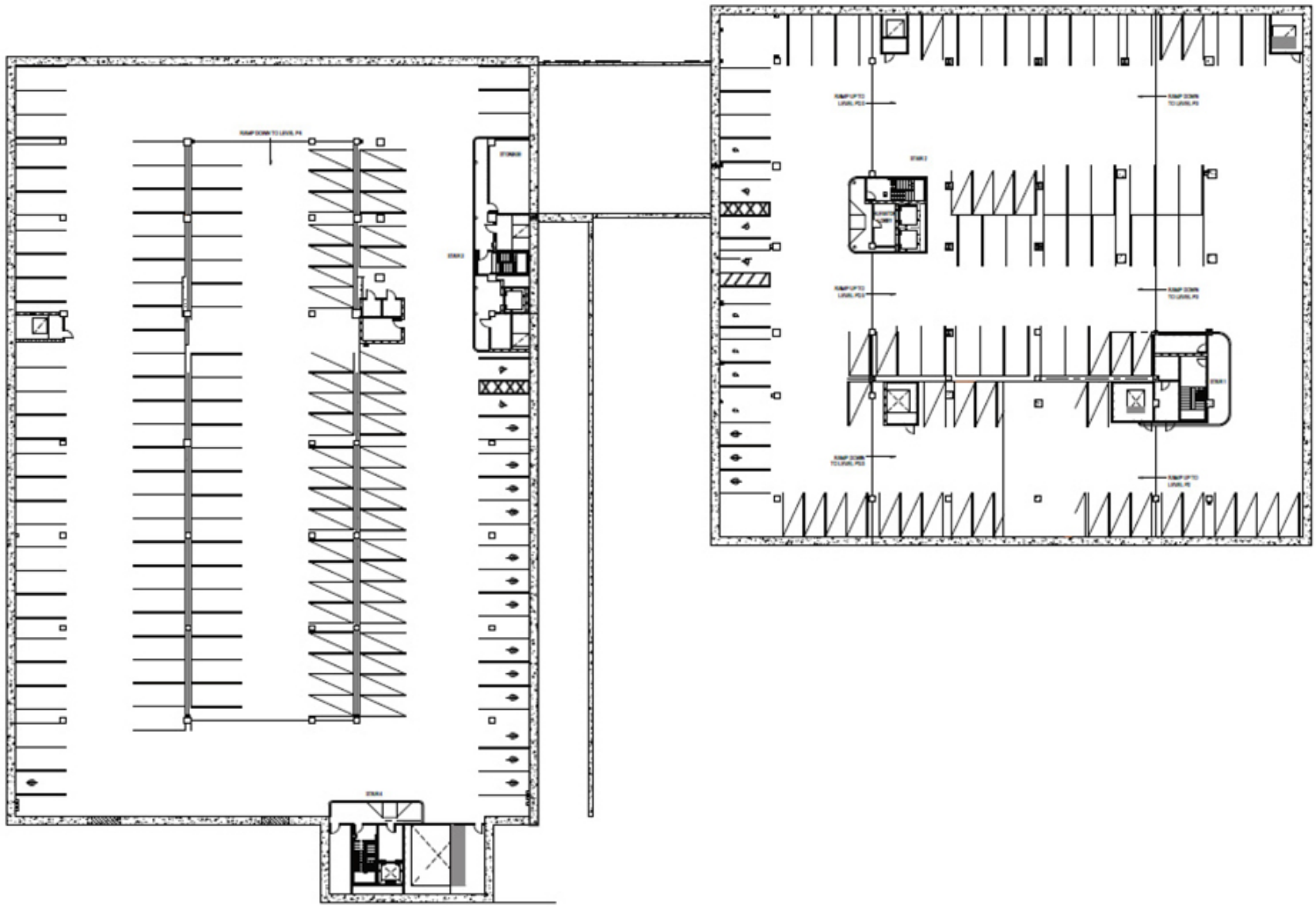
GARAGE LEVEL 1

EXHIBIT 2B



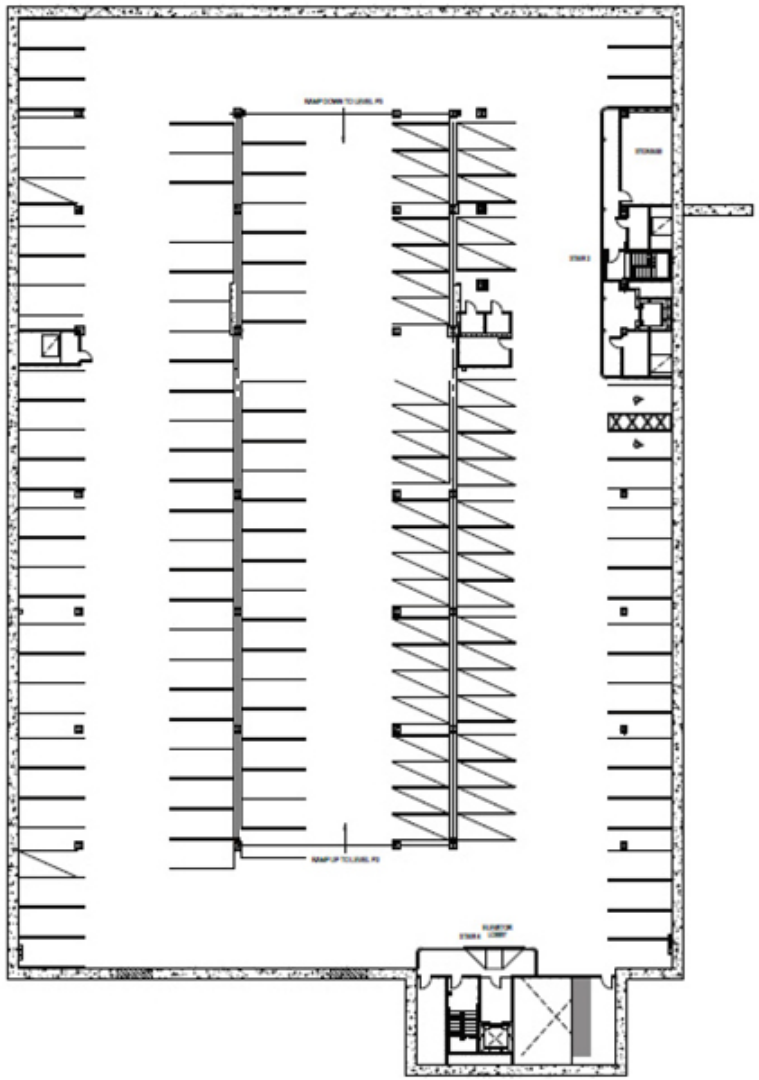
GARAGE LEVEL 2

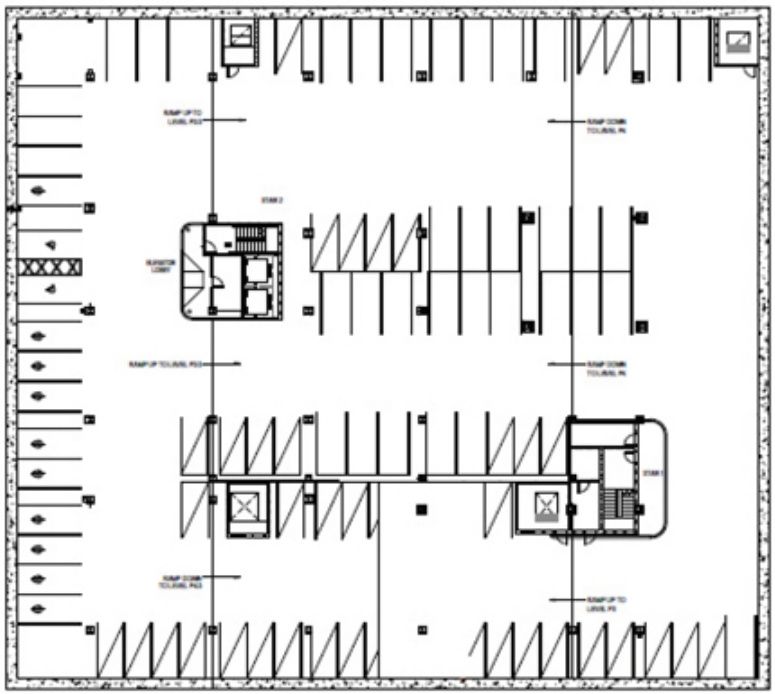
EXHIBIT 2B



GARAGE LEVEL 3

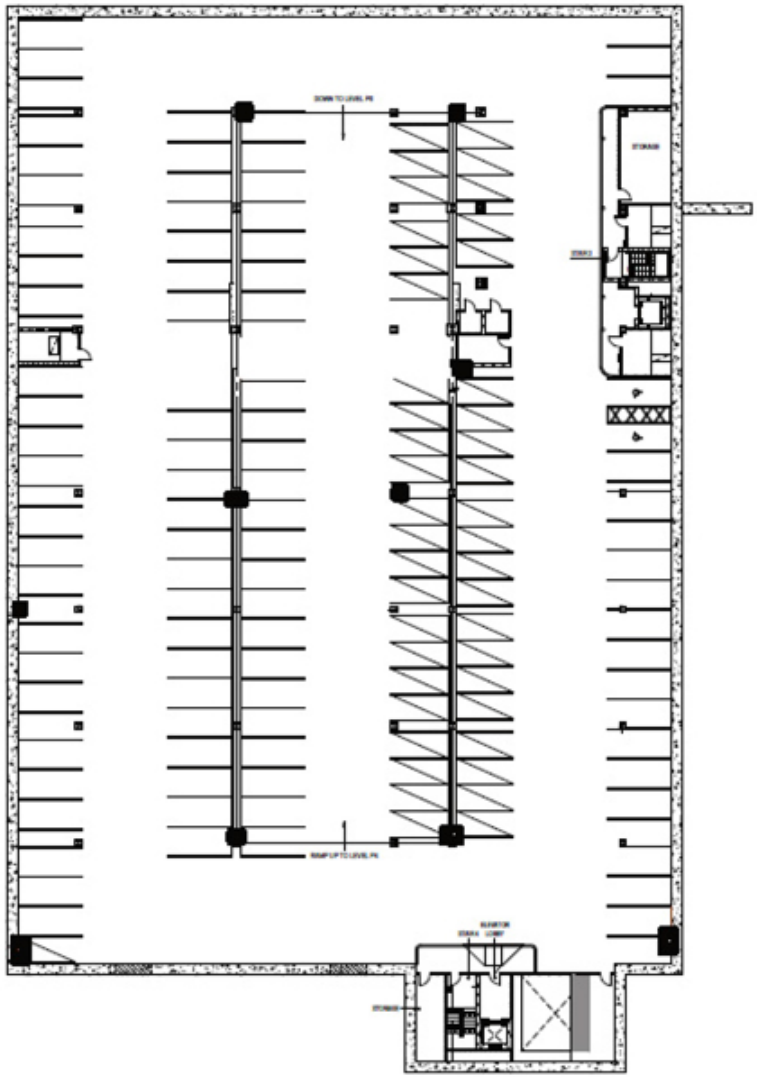
EXHIBIT 2B

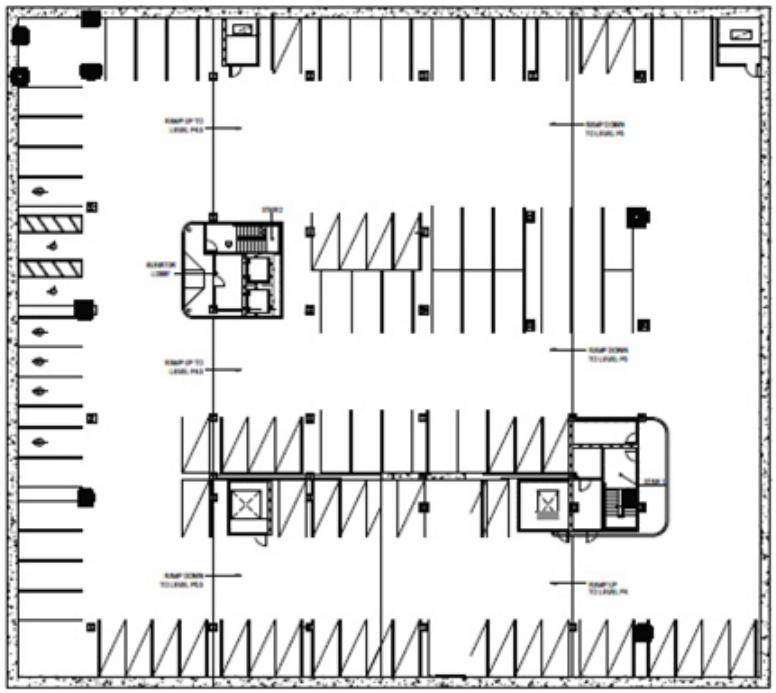




GARAGE LEVEL 4

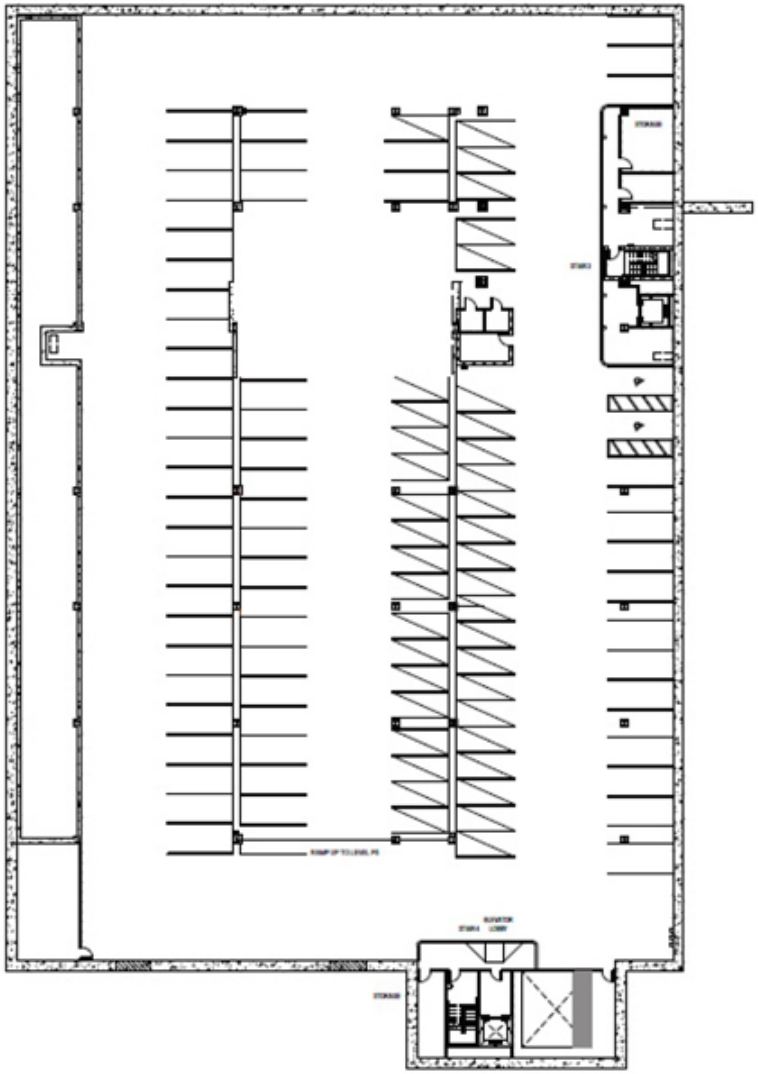
EXHIBIT 2B

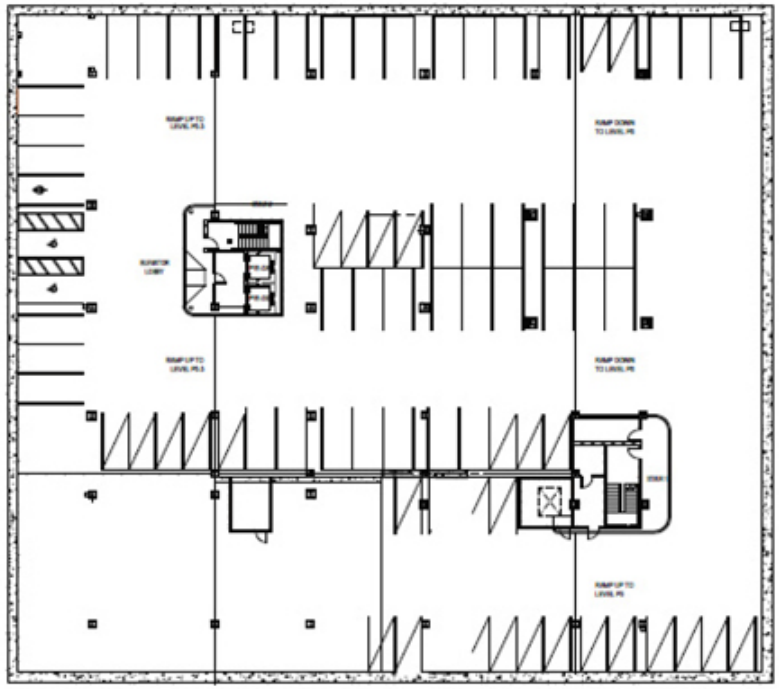




GARAGE LEVEL 5

EXHIBIT 2B





GARAGE LEVEL 6

EXHIBIT 3
MEMORIALIZATION OF DATES AGREEMENT

[Date]

[Tenant Name]
[Address]
[Attn: _____]

Re: Lease dated _____ ([as amended,] the "**Lease**") by and between _____ ("**Landlord**"), and _____ ("**Tenant**") with respect to _____ rentable square feet on the _____ floor of the Building located at _____, Cambridge, MA.

Dear _____

In accordance with the terms and conditions of the Lease, Tenant accepts possession of the Premises and acknowledges:

The Phase 1 Term Commencement Date is _____.

The Phase 1 Rent Commencement Date is _____.

The Phase 2 Term Commencement Date is _____.

The Phase 2 Rent Commencement Date is _____.

The Expiration Date is _____.

This letter is binding upon and shall inure to the benefit of Landlord and Tenant and their respective successors and assigns.

Please acknowledge the foregoing and your acceptance of possession by signing a copy of this letter in the space provided and returning it to _____. Tenant's failure to execute and return this letter, or to provide written objection to the statements contained in this letter, within ten (10) business days after the date of this letter, shall be deemed an approval by Tenant of the statements contained herein.

Sincerely,
[NAME OF LANDLORD]

By: _____
Name:
Title:

Acknowledged and Accepted:

[NAME OF TENANT]

By: _____

Name:
Title:
Date: , 20

EXHIBIT 4

FORM OF NOTICE OF LEASE

NOTICE OF LEASE

Notice is hereby given pursuant to Chapter 183, Section 4 of the General Laws, of a lease upon the following terms:

Landlord:	
Tenant:	
Date of Lease Execution:	_____, 20__.
Premises:	_____. The land on which the Premises are located is more particularly described on Exhibit A attached hereto and incorporated herein.
Term and Commencement Date:	Approximately _____ (____) years, commencing on _____, 20__ and expiring on _____, 20__.
Extension Options:	_____ (____) extension options of _____ (____) years each. An affidavit signed by the Landlord and recorded with the Middlesex South Registry of Deeds shall be conclusive in favor of any person acting in reliance thereon, without necessity of further inquiry, as to whether such option has been exercised by Tenant or has lapsed unexercised, or has been waived or terminated.

An affidavit signed by the Landlord and recorded with the Middlesex South Registry of Deeds shall be conclusive in favor of any person acting in reliance thereon, without necessity of further inquiry, as to whether the Lease was terminated prior to its scheduled expiration.

This Notice of Lease has been executed merely to give notice of the Lease, and all of the terms, conditions and covenants thereof which are incorporated herein by reference. The parties hereto do not intend this Notice of Lease to modify or amend the terms, conditions and covenants of the Lease.

Executed as an instrument this day of , 20

LANDLORD:

By: _____
Name:
Title:

TENANT:

By: _____
Name:
Title:

COMMONWEALTH OF MASSACHUSETTS

_____, ss. _____, 20__

On this day, before me, the undersigned notary public, personally appeared _____ (name of document signer), proved to me through satisfactory evidence of identification, which was _____, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that (he) (she) signed it voluntarily for its stated purpose[, (as partner for _____, a corporation) (as _____ for _____ a corporation) (as attorney in fact for _____, the principal) (as _____ for _____, (a) (the) _____)] as the voluntary act of [INSERT NAME OF THE ENTITY].

_____ (official signature and seal of notary)
My commission expires _____

COMMONWEALTH OF MASSACHUSETTS

_____, ss. _____, 20__

On this day, before me, the undersigned notary public, personally appeared _____ (name of document signer), proved to me through satisfactory evidence of identification, which was _____, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that (he) (she) signed it voluntarily for its stated purpose[, (as partner for _____, a corporation) (as _____ for _____ a corporation) (as attorney in fact for _____, the principal) (as _____ for _____, (a) (the) _____)] as the voluntary act of [INSERT NAME OF THE ENTITY].

_____ (official signature and seal of notary)
My commission expires _____

EXHIBIT A

LEGAL DESCRIPTION

EXHIBIT 4, PAGE 4

EXHIBIT 5

WORK LETTER

1. Representatives.

(a) Landlord's Authorized Representative. Landlord designates, as Landlord's authorized representative ("**Landlord's Authorized Representative**"). Maureen McCaffrey as the individual authorized by Landlord to approve on behalf of Landlord all plans, drawings and other matters for which the approval of Landlord is required or contemplated pursuant to this Work Letter. Tenant shall not be obligated to respond to or act upon any such item until such item has been initialed or signed or submitted in writing (as applicable) by Landlord's Authorized Representative. Landlord may change Landlord's Authorized Representative and/or name additional persons to serve as Landlord's Authorized Representative (provided that Tenant may rely upon the authorization of any one of such persons) upon one (1) business day's prior written notice to Tenant. Landlord agrees that Landlord's Authorized Representative(s) shall be reasonably available to meet and consult with Tenant's Authorized Representative in person (in the vicinity of the Property) or by phone (at the election of Tenant's Authorized Representative) upon reasonable prior notice by Tenant.

(b) Tenant's Authorized Representative. Tenant designates, as Tenant's authorized representative ("**Tenant's Authorized Representative**"), Chris Hill as the individual authorized by Tenant to initial and sign all plans, drawings, change orders and approvals pursuant to this Work Letter. Landlord shall not be obligated to respond to or act upon any such item until such item has been initialed or signed or submitted in writing (as applicable) by Tenant's Authorized Representative. Tenant may change Tenant's Authorized Representative and/or name additional persons to serve as Tenant's Authorized Representative (provided that Landlord may rely upon the authorization of any one of such persons) upon one (1) business day's prior written notice to Landlord. Tenant agrees that Tenant's Authorized Representative shall be reasonably available to meet and consult with Landlord's Authorized Representative in person (in the vicinity of the Property) or by phone (at the election of Tenant's Authorized Representative) as and when needed, upon reasonable prior notice by Landlord.

(c) Methods of Communication. Notwithstanding anything to the contrary, all notices, plan deliveries, requests for approval and the like required under this Work Letter shall be delivered by email (or other means agreed to by the parties), and shall not be required to be sent to the parties listed in or designated pursuant to Article 24 of the Lease. With respect to email communications, each party shall cc any parties designated for such copies by Landlord's Authorized Representative(s) or Tenant's Authorized Representative(s), as applicable. It is understood and agreed that approvals or consents must be communicated by a written signed document, which may be delivered by a PDF, TIF or JPG file or other mutually agreed image file delivered by email (the parties acknowledging that such electronic signatures on approvals and/or consents shall be binding for the purposes set forth in this Work Letter). Landlord and Tenant hereby agree that all plans, pricing information and schedules to be delivered pursuant to this Work Letter may also be delivered by uploading the same to a website to which Landlord's Authorized Representative and Tenant's Authorized Representative (and any persons designated by Landlord's Authorized Representative and/or Tenant's Authorized Representative, such

designation including the person's name, email address and company) shall have access. Promptly after uploading any document to such website, an email shall be sent to all parties having access thereto. Other project-related information (including, without limitation, commissioning documents, meeting minutes, basis for design, design submissions and contractor submittals, including without limitation requests for information) may also be posted to a project website to which Landlord's Authorized Representative and Tenant's Authorized Representative (and any persons designated by Landlord's Authorized Representative and/or Tenant's Authorized Representative, such designation including the person's name, email address and company) shall have access. Promptly after uploading any document to such project website, an email shall be sent to all parties having access thereto.

2. Landlord's Work.

(d) General. Landlord, at Landlord's sole cost and expense (subject to Section 5 below), shall perform (i) the work ("**Landlord's Base Building Work**") more particularly described in the plans and specifications referenced in Schedule A attached hereto and made a part hereof (as the same may be changed pursuant to Section 4(b) below, the "**Base Building Plans**"), which work includes, among other things, the general categories of work specified in the table attached hereto as Schedule B (the "**Matrix**") which are marked with an "x" in the column under the heading "Landlord Shell/Core", and (ii) all of the improvements set forth in the Final Plans, as hereinafter defined ("**Tenant's Fitout**"; and together with Landlord's Base Building Work, "**Landlord's Work**"). All of Landlord's Work shall be constructed using new materials of the quality called for in the Base Building Plans or the Final Plans, as applicable, in a good and workmanlike manner, and in accordance with all Legal Requirements, and Landlord shall use commercially reasonable efforts to substantially complete Landlord's Work with respect to each Phase on or before the applicable Estimated Delivery Date (hereinafter defined).

(e) General Contractor. Landlord and Tenant have agreed that Landlord shall enter (or, with respect to Landlord's Base Building Work, may have previously entered) into guaranteed maximum price construction contracts with Turner Construction Company (having an office at Two Seaport Lane, Suite 200, Boston, MA 02210) (as such contractor may be replaced by Landlord with the approval of Tenant, which approval shall not be unreasonably withheld, conditioned or delayed, the "**Approved Contractor**") to construct pursuant to separate and distinct construction contracts (i) Landlord's Base Building Work in accordance with the Base Building Plans, and (ii) Tenant's Fitout in accordance with the Final Plans. Landlord shall cause the Approved Contractor to agree to reasonably allocate general conditions between Landlord's Base Building Work and Tenant's Fitout. Landlord shall use commercially reasonable efforts to execute the GMP Contract for Tenant's Fitout within thirty (30) days after the Execution Date and shall deliver to Tenant a copy thereof prior to execution. In addition to the amendments contemplated by Section 3(b) below, Landlord shall execute one or more amendments to such GMP Contract for Tenant's Fitout to incorporate the scope of work reflected on the Final Plans and the price reflected in the Final Cost Estimate (each, a "**Budget / Scope Amendment**"), and shall deliver to Tenant a copy of each Budget / Scope Amendment prior to execution. In connection with the construction of Landlord's Work, Landlord shall use commercially reasonable efforts to enforce the terms of the construction contracts. Without limiting the foregoing, if timely notice has been given and if Landlord has the benefit of any guarantees, contract rights, or other claims against contractors, materialmen or architects, Landlord shall, with regard to any defects in Landlord's Work, exercise

commercially reasonable efforts (which shall not require any litigation or alternative dispute resolution) to enforce such guarantees or contract rights; provided, however, Landlord shall have no such obligation with respect to any (A) defect(s) in the Final Plans, (B) manufacturer's defects with respect to any equipment or fixtures purchased directly by Tenant, nor (C) with respect to any defect(s) resulting from (w) misuse, (x) Tenant's breach of its maintenance and repair obligations under the Lease, (y) the negligence or willful misconduct of any Tenant Party, or (z) reasonable wear and tear.

(f) Construction Meetings. During the performance of Tenant's Fitout, Landlord shall schedule and conduct weekly meetings regarding the scheduling, progress, performance, construction and completion of Tenant's Fitout. Periodically at such meetings, Landlord's Authorized Representative shall provide Tenant's Authorized Representatives with status updates regarding the progress of Landlord's Base Building Work. Landlord's Authorized Representative and Tenant's Authorized Representative shall attend such meetings (in person or by phone). Prior to commencement of Tenant's Fitout, Landlord's Authorized Representative shall provide Tenant's Authorized Representatives with periodic status updates regarding the progress of Landlord's Base Building Work.

(g) Permitting. Landlord shall obtain all permits for construction of Landlord's Work. The cost of all permits for construction of Tenant's Fitout (and the cost of obtaining the same) shall be included in Work Costs (hereinafter defined). Tenant shall cooperate with Landlord in executing permit applications and performing other ministerial acts reasonably necessary to enable Landlord to obtain any such permit.

(h) Timing of Construction. Landlord shall substantially complete Landlord's Work (i) with respect to Phase 1 on or before the date which is twenty-eight (28) months after the Execution Date (the "**Estimated Phase 1 Delivery Date**"), and (ii) with respect to Phase 2 on or before the date which is forty (40) months after the Execution Date (the "**Estimated Phase 2 Delivery Date**" and each, an "**Estimated Delivery Date**"). The Estimated Delivery Dates shall be extended on a day-for-day basis on account of Landlord's Force Majeure and Tenant Delays.

(i) Remedies for Late Delivery.

(i) Milestone. If, subject to Tenant Delays, installation of the structural steel for the Lab Addition has not been substantially completed (as reasonably determined by Landlord's architect) on or before the date which is twenty-eight (28) months after the Execution Date, Tenant shall have the right, exercisable by notice to Landlord while such failure persists, to terminate the Lease.

(ii) Late Delivery. If the applicable Phase is not delivered to Tenant in the condition required by Section 3.1 of the Lease within sixty (60) days after the applicable Estimated Delivery Date (as same may be delayed due to Landlord's Force Majeure and Tenant Delays, the "**Delay Date**"), the applicable Rent Commencement Date shall be delayed one day for each day after the Delay Date that such Phase is not so delivered through the Double Delay Date (hereinafter defined). If the applicable Phase is not delivered to Tenant in the condition required by Section 3.1 of the Lease within one hundred twenty (120) days after the applicable Estimated Delivery Date (as same may be delayed due to Landlord's Force Majeure and Tenant Delays, the "**Double Delay**

Date"), then after the delay to the Rent Commencement Date set forth in the previous sentence, the Rent Commencement Date shall be delayed two (2) days for each day after the Double Delay Date that the applicable Phase is not so delivered. If Phase 1 is not delivered to Tenant in the condition required by Section 3.1 of the Lease by the date that is twelve (12) months after the Estimated Phase 1 Delivery Date (as same may be delayed due to Landlord's Force Majeure and Tenant Delays), then Tenant shall have the right, exercisable by notice to Landlord while such failure persists, to terminate the Lease. If Phase 1 is not delivered to Tenant in the condition required by Section 3.1 of the Lease by the date that is twenty-one (21) months after the Estimated Phase 1 Delivery Date (as same may be delayed due to Tenant Delays, but not due to Landlord's Force Majeure), then Tenant shall have the right, exercisable by notice to Landlord while such failure persists, to terminate the Lease. The remedies set forth in this Section 2(f) are Tenant's sole and exclusive rights and remedies if either Phase is not delivered on or before the applicable Estimated Delivery Date.

(j) Tenant Delays. A "**Tenant Delay**" for purposes of this Work Letter means any actual delay to substantial completion of Landlord's Work to the extent arising from any act or omission of any of the Tenant Parties and includes without limitation (A) Tenant's failure to timely act or respond or cause Tenant's Architect to act or respond within the time periods expressly provided under this Work Letter, (B) changes to Landlord's Work initiated by Tenant, and (C) those specific acts or omissions which, under the express terms of this Work Letter, constitute a Tenant Delay. Landlord shall give written notice to Tenant of any Tenant Delays within a reasonable time, and in all events within five (5) business days, after Landlord becomes actually aware of any Tenant Delay. Landlord shall, at Tenant's cost, use commercially reasonable efforts to mitigate the impact of any Tenant Delay.

(k) Completion of Performance. Subject to performance of the BB Punchlist Items and the TF Punchlist Items (each as hereinafter defined), and subject to the last sentence of Section 2(b) above, Landlord will be deemed to have fully performed all of its obligations under this Work Letter upon the applicable Term Commencement Date.

(l) Schedule. Attached hereto as Schedule C is a preliminary schedule for the construction phase of Landlord's Base Building Work and the estimated schedule for design and construction phases of Tenant's Fitout (as the same is updated pursuant to the terms hereof, the "**Construction Schedule**"). During the course of design and construction of Tenant's Fitout, Landlord shall cause the Construction Schedule to be updated periodically to reflect the actual progress of such design and construction, as applicable, and shall cause such updates to be delivered to Tenant monthly, but such updates shall not be deemed to amend or modify any of Landlord's obligations under this Work Letter.

3. Tenant's Fitout.

(a) Tenant's Plans. In connection with the performance of the work necessary to prepare the Premises for Tenant's occupancy and business operations ("**Tenant's Fitout**"), Tenant shall engage AHA Consulting Engineers, Inc. as Tenant's MEP Engineer and shall engage Perkins & Will as Tenant's architect for Tenant's Fitout. Furthermore, in connection with Tenant's Fitout, (i) on or before August 1, 2019, an electronic copy and four (4) full sized copies of schematic drawings (the "**Schematic Drawings**") containing a layout and designation of all offices,

laboratories, rooms and other partitioning, their intended use, and identity and size of all equipment (including without limitation lab casework) to be contained therein, (ii) on or before December 15, 2019, an electronic copy and four (4) full sized copies of design development plans based on the approved Schematic Drawings, with sufficient information and detail to accurately describe the proposed design of the Premises and document the programmatic requirements for Tenant's Fitout (it being understood and agreed that the mechanical and electrical portions of such plans shall be suitable for purchase of subcontract bidding and contracting) (the "**Design Development Plans**"), and (iii) on or before April 15, 2020, an electronic copy and four (4) full sized copies of a fully coordinated set of architectural, structural, mechanical, electrical and plumbing engineering plans and specifications based on the approved Design Development Plans and in a form which is sufficiently complete to allow the Approved Contractor and subcontractors to bid on the work and to obtain all applicable permits for Tenant's Fitout ("**Final Construction Drawings**"). The Schematic Drawings, the Design/ Development Plans and the Final Construction Drawings are collectively referred to herein as the "**Plans**." It is understood and agreed that Tenant's Fitout does not include the installation of Tenant's furniture, trade fixtures or equipment (the installation of which shall be performed by Tenant (as contemplated by Section 3(h) below) in accordance with Section 11 of the Lease). Landlord's approval of the Schematic Drawings and the Design Development Plans (and the Final Construction Drawings, provided that the Final Construction Drawings are consistent with the Design/Development Plans) shall not be unreasonably withheld, conditioned or delayed provided the Plans comply with the requirements to avoid aesthetic or other conflicts with the design and function of the balance of the Building and the Property; and provided, further that Landlord may withhold its approval in its sole discretion with respect to (v) any density of use of the Premises in a manner inconsistent with the design of the base building, (w) any work that materially and adversely affects the roof and/or Building systems, (x) material matters of aesthetics related to work to or materially affecting the exterior of the Premises, (y) any work adversely affecting the Building structure and/or (z) any work resulting in a change to the rentable square footage of the Premises. Landlord may reasonably disapprove any iteration of any of the Plans based on Landlord's reasonable conclusion that one or more aspects of such Plans will cause an actual delay of the substantial completion of Landlord's Work beyond the applicable Estimated Delivery Date (it being understood that if Landlord reasonably disapproves any of the Plans on such basis, and Tenant determines in writing to negate such disapproval, any such actual delay of substantial completion of Landlord's Work shall be deemed a Tenant Delay, and Landlord shall not disapprove such Plans based on such potential delay). Landlord's approval is solely given for the benefit of Landlord and Tenant under this Section 3 and neither Tenant nor any third party shall have the right to rely upon Landlord's approval of the Plans for any other purpose whatsoever. Landlord shall not be responsible for any errors, omissions or defects contained in the Plans or the costs resulting therefrom. To the extent substantial completion of Landlord's Work is delayed due to errors, omissions or defects in any of the Plans, such delays shall be Tenant Delays. Any request for approval of the Plans shall be accompanied by (A) a certification from a licensed code engineer that such plans are code compliant, and (B) a certification from Landlord's MEP engineer that the Plans are compatible with the base building design. If Tenant timely submits drafts of the Plans for review and approval, Landlord shall use commercially reasonable efforts to respond to any such timely request for approval of the Plans within twelve (12) business days after receipt thereof; provided, however, if Landlord engages Perkins & Will as the architect for Tenant's Fitout, Landlord shall use commercially reasonable efforts to respond to any such timely request for approval of the Plans within five (5) business days after receipt thereof. Landlord shall notify

Tenant in reasonable detail if any of the Plans are unsatisfactory or incomplete in any respect. In the event Landlord disapproves any of the Plans, Tenant shall revise the same to address Landlord's comments and shall submit such revised Plan to Landlord for approval (and such process shall be continued until such Plan is approved by Landlord). The iteration of the Final Construction Drawings that is approved by Landlord shall be referred to herein as the "**Approved Plans**." The Approved Plans, as they may be changed pursuant to Section 3(b) below, are hereinafter referred to as the "**Final Plans**."

(b) Changes.

(i) *Tenant Changes.* Prior to submitting a Change Proposal (hereinafter defined) to Landlord for approval, Tenant shall have the right to submit inquiries to Landlord based on conceptual information then available to Tenant (which may include sketches) in order to obtain an understanding from Landlord as to whether certain changes to the Approved Plans would be conceptually acceptable to Landlord. Landlord shall promptly respond to such inquires (or shall promptly notify Tenant if further information is necessary in order for Landlord to respond to such inquiry). Landlord shall include in its response to any such inquiry Landlord's preliminary approval or disapproval of the conceptual work that is the subject of such inquiry, it being understood and agreed that any such conceptual approval shall be subject to Landlord's review of the detailed information required to be included in a Change Proposal with respect thereto (as contemplated below). Tenant shall have the right, in accordance herewith, to submit for Landlord's approval (which approval shall be given or withheld in accordance with the standards set forth in Section 3(a) above) change proposals to amend or modify the Approved Plans, which proposals shall include detailed plans, cut sheets and specifications suitable for construction and shall detail the nature and extent of any requested changes (each, a "**Change Proposal**"). Change Proposals shall be signed by Tenant's Authorized Representative. Landlord agrees to respond to any such Change Proposal within five (5) business days after the submission thereof by Tenant (unless Landlord has previously advised Tenant that a longer time period for such response is reasonably necessary due to the nature and/or scope of the Change Proposal, together with Landlord's good faith estimate as to the amount of additional time that will be necessary, or the fact that the information provided by Tenant in the Change Proposal is insufficient for the purposes of enabling Landlord to make the determination set forth herein), and if approved by Landlord, advising Tenant of any anticipated increase or decrease in costs associated with such Change Proposal ("**Anticipated Costs**"), as well as an estimate of any delay to substantial completion of Landlord's Work that would result if such Change Proposal is implemented ("**Landlord's Change Order Response**"). If Landlord does not approve any Change Proposal, Landlord shall provide Tenant with a reasonably detailed explanation thereof in writing. Tenant shall have the right to approve or withdraw any Change Proposal within five (5) business days after receipt of Landlord's Change Order Response. If Tenant fails to respond to any Landlord's Change Order Response within such five (5) business day period, the applicable Change Proposal shall be deemed withdrawn. If Tenant timely approves Landlord's Change Order Response, then (a) such Change Proposal shall be deemed a "Change Order" hereunder, and (b) Landlord shall perform the work described in the Change Order as part of Tenant's Fitout on all the terms and conditions applicable to Tenant's Fitout. Any actual delay in the substantial completion of Landlord's Work resulting from Change Proposals (whether approved or not) shall constitute a Tenant Delay.

(ii) *Landlord Changes*. With respect to Tenant's Fitout, Landlord shall have the right to make (A) field changes that do not (individually or in the aggregate) (1) impact the dimensions of the Premises except to a de minimis extent, (2) materially affect the appearance or utility of the Premises, (3) interfere with Tenant's access to, or use or enjoyment of, the Premises except to a de minimis extent, (4) delay (and are not reasonably expected to delay) substantial completion of Landlord's Work beyond the applicable Estimated Delivery Date (as extended by Tenant Delay(s) and Landlord's Force Majeure), or (5) increase the amount payable by Tenant pursuant to Section 5 below by more than a de minimis amount unless Landlord agrees to pay such increase in costs, and (B) non-discretionary field changes required by governmental authorities (all of the foregoing, "**Permitted Changes**"). No Landlord delay shall be deemed to result from any Permitted Changes. Any changes by Landlord to the Approved Plans other than Permitted Changes (each, a "**Landlord Change**") shall be requested and instituted in accordance with the provisions of this Section 3(b)(ii) and shall be subject to the written approval of Tenant in accordance with this Section 3(b)(ii). Landlord may request Landlord Changes in writing by written notice (a "**Landlord Change Request**") providing reasonable detail regarding the nature and extent of any requested Landlord Changes and shall include (x) Approved Contractor's reasonable and detailed estimate of any increase or decrease in the Work Costs and (y) Approved Contractor's reasonable and detailed good faith estimate of any change in the projected date for substantial completion of Landlord's Work resulting therefrom. All Landlord Change Requests shall be signed by Landlord's Authorized Representative. As soon as reasonably possible, and in any event within ten (10) business days of receipt of a Landlord Change Request, Tenant shall deliver a written response to such Landlord Change Request and in such response shall indicate Tenant's approval or disapproval of such Landlord Change Request, which approval shall not be unreasonably withheld, conditioned or delayed, and if Tenant shall disapprove such Landlord Change Request, Tenant shall advise Landlord of the reasons therefor. If Tenant fails to timely respond to any Landlord Change Request, Tenant shall be deemed to have approved the same.

(c) Long-Lead Items. After approval of the Schematic Drawings (as to scope of work and budget), the Approved Contractor shall prepare a list of long-lead items required in connection with the performance of the work reflected on such Schematic Drawings (the "**Long-Lead Items List**"), if any, and Landlord shall deliver the Long-Lead Items List to Tenant for review and approval, which approval shall not be unreasonably withheld or conditioned. Within ten (10) business days, Tenant shall deliver a written approval or disapproval of such Long-Lead Items List, and if Tenant shall disapprove such Long-Lead Items List, Tenant shall advise Landlord of the reasons therefor. If Tenant fails to timely respond to the Long-Lead Items List, Landlord shall have the right to send a "reminder notice," which shall be sent in an envelope that conspicuously states the following in bold caps "**NOTICE REQUIRING TIMELY RESPONSE**" and which shall include (i) a copy of the originally requested Long-Lead Items List, (ii) an explicit statement that such notice is a "reminder notice" as provided in this Section 3(c), and (iii) an explicit statement that the failure to respond will trigger the provisions of this Section 3(c) for deemed approval. If Tenant fails to respond to such reminder notice within two (2) business days after receipt thereof, Tenant shall be deemed to have approved the Long-Lead Items List. Upon Tenant's approval (or deemed approval) of the Long-Lead Items List, Landlord shall be authorized to proceed with the acquisition of the items included in the Long-Lead Items List and the cost of such items shall be included in Work Costs.

(d) Bidding. The Approved Contractor shall solicit at least three (3) subcontract bids for each trade for which the total cost is expected to exceed $50,000 other than electrical and fire alarm subcontractors (it being understood and agreed that Landlord shall have the right to engage the same electrical and fire alarm subcontractors for Tenant's Fitout as are engaged for Landlord's Base Building Work). Landlord shall promptly supply Tenant with such detailed available information about bid requests and the background of, and negotiations with, subcontractors as Tenant may reasonably request. Landlord and the Approved Contractor shall select such bids based on Approved Contractor's good faith assessment of such subcontractor's prior performance and reputation, price, likelihood of timely completion and all other relevant factors customarily considered by prudent owners of first-class office and laboratory buildings.

(e) Architect Duties. Tenant shall cause its architect to timely perform such acts as may be reasonably required or requested in order to effectuate the provisions hereof, including without limitation (i) providing reasonably detailed information within two (2) business days (or such additional time reasonably necessary) after request therefor, (ii) attending meetings, visiting the site and/or conducting inspections and/or walk-throughs of the Premises upon at least five (5) days' notice, (iii) preparing the TF Punchlist (hereinafter defined) within three (3) business days after Landlord's request, which request shall be accompanied by the Approved Contractor's work-to-complete list, (iv) assuming there is no dispute over the facts, delivering the certificate of substantial completion referenced in Section 3(f) below within five (5) business days after preparation of the TF Punchlist. Any actual delays to substantial completion of Tenant's Fitout to the extent resulting from such architect's failure to timely perform such obligations shall constitute Tenant Delays. Any actual delays to substantial completion of Tenant's Fitout to the extent resulting from such architect's failure to timely perform such obligations shall constitute Tenant Delays. If Tenant's architect fails to timely prepare the TF Punchlist and/or deliver the certificate of substantial completion, then unless Tenant is using Perkins & Will as its architect throughout the design and construction phases of Tenant's Fitout, Landlord shall have the right to substitute another architect in place of Tenant's architect, in which event such substituted architect's TF Punchlist and certificate of substantial completion shall be binding on Tenant, and the reasonable costs of such substituted architect shall be included in Work Costs.

(f) Substantial Completion. Tenant's Fitout with respect to each Phase shall be deemed "**substantially complete**" on the date that all of Tenant's Fitout with respect to such Phase has been completed except for TF Punchlist Items (hereinafter defined) relative thereto, as certified in writing by Tenant's architect (subject to Section 3(e) above). Promptly after Tenant's Fitout with respect to each Phase is substantially complete, Tenant's architect shall deliver a written certification to Landlord and Tenant, which certification shall be presumptive evidence of substantial completion of Tenant's Fitout with respect to such Phase.

(g) TF Punchlist Items. Attached to each certificate of substantial completion referenced in Section 3(f) above shall be a list prepared by Tenant's architect (each, a "**TF Punchlist**") of outstanding items (the "**TF Punchlist Items**") which (i) need to be performed to complete Tenant's Fitout with respect to such Phase, and (ii) do not materially interfere with the use of such Phase for the Permitted Use. Subject to Landlord's Force Majeure and Tenant Delays, Landlord shall, unless otherwise specified on the TF Punchlist, endeavor to complete the applicable TF Punchlist Items within sixty (60) days of the date of the applicable TF Punchlist.

(h) Certificate of Occupancy. Landlord and Tenant acknowledge and agree that Tenant must perform certain installations and other work beyond the scope of Landlord's Work (which may include, without limitation, installation of its furniture and/or performance of any Alterations not included in Tenant's Fitout) in order for a certificate of occupancy for the applicable Phase to be issued (such work, the "**Certificate Work**"). Within three (3) business days after the later to occur of (i) substantial completion of Landlord's Work with respect to each Phase, and (ii) the date on which Tenant notifies Landlord in writing ("**Tenant's CW Notice**") that Tenant has completed the Certificate Work relative to such Phase, Landlord shall apply for a certificate of occupancy for the applicable Phase, and shall thereafter diligently pursue and secure the same (Landlord agreeing that it shall endeavor to secure the same within forty-five (45) days following Tenant's CW Notice, subject to delays caused by the acts or omissions of any of the Tenant Parties); provided, however, to the extent that Tenant elects to make Alterations to the applicable Phase after the applicable Term Commencement Date but prior to the issuance of a final certificate of occupancy for such Phase, Landlord shall not be obligated to apply for a certificate of occupancy for such Phase until such Alterations have been substantially completed or Tenant notifies Landlord that Tenant has elected not to perform such Alterations. In no event shall Landlord be obligated to apply for a certificate of occupancy prior to the date which is three (3) Business Days after the date of Tenant's CW Notice**.**

4. Landlord's Base Building Work.

(a) Changes. Landlord shall have the right from time to time, without Tenant's consent and at no direct or indirect cost to Tenant (including Operating Expenses and Taxes), to make (i) changes to Landlord's Base Building Work and the sequencing of performance thereof so long as such changes do not (individually or in the aggregate) (A) impact the dimensions of the Premises except to a de minimis extent, (B) materially affect the appearance or utility of the Premises, (C) interfere with Tenant's access to, or use or enjoyment of, the Premises except to a de minimis extent, (D) delay (and are not reasonably expected to delay) substantial completion of Landlord's Work beyond the applicable Estimated Delivery Date (as extended by Tenant Delay(s) and Landlord's Force Majeure), or (E) increase the amount payable by Tenant pursuant to Section 5 below by more than a de minimis amount unless Landlord agrees to pay such increase in cost; (ii) changes to Landlord's Base Building Work and the sequencing of performance thereof to reflect (A) the ACF Elevator (hereinafter defined), and (B) the construction of one or more bridges connecting the Office Building and the Laboratory Addition (but in no event shall any such bridge be constructed above the fifth (5 th) floor of the Office Building); and (iii) non-discretionary field changes to Landlord's Base Building Work required by governmental authorities (and the sequencing of performance of Landlord's Base Building Work as a result thereof). Landlord shall have the right to make other changes to Landlord's Base Building Work and the sequencing of performance thereof from time to time at no cost to Tenant so long as Landlord shall first obtain Tenant's approval, which shall not be unreasonably withheld, conditioned or delayed, and which approval shall be deemed given if Tenant does not disapprove the same in a written notice delivered to Landlord within five (5) business days after delivery of Landlord's request for such approval. Tenant shall not have the right to make changes to Landlord's Base Building Work.

(b) Substantial Completion. Landlord's Base Building Work shall be deemed "**substantially complete**" on the date that all of Landlord's Base Building Work (other than the ACF Elevator) has been completed except for BB Punchlist Items (hereinafter defined), as certified

in writing by Landlord's architect. Promptly after Landlord's Base Building Work is substantially complete, Landlord's architect shall deliver a written certification to Landlord and Tenant, which certification shall be presumptive evidence of substantial completion of Landlord's Base Building Work, subject to reasonable challenge by Tenant within five (5) business days following the date of Tenant's receipt of such written certification.

(c) BB Punchlist Items. Attached to the certificate of substantial completion referenced in Section 4(b) above shall be a list prepared by Landlord's architect (the "**BB Punchlist**") of outstanding items (the "**BB Punchlist Items**") which (a) need to be performed to complete Landlord's Base Building Work, and (b) do not materially impair Tenant's ability to use the Premises for the Permitted Use (it being understood and agreed that the ACF Elevator may not be substantially complete at the time of the BB Punchlist and the same shall not be deemed to Tenant's ability to use the Premises for the Permitted Use). Subject to Landlord's Force Majeure and Tenant Delays, Landlord shall, unless otherwise specified on the BB Punchlist, complete all BB Punchlist Items relating to or affecting the Premises and the Common Areas within sixty (60) days of the date of the BB Punchlist.

(d) ACF Elevator. Landlord and Tenant acknowledge and agree that Landlord will make certain changes to Landlord's Base Building Work to add the ACF Elevator. Notwithstanding anything to the contrary (including without limitation Sections 4(b) and 4(c) above and Section 3.1 of the Lease), so long as Tenant has reasonable non-exclusive use of the Building freight elevator for Animal Transportation,

(e) the construction and installation of the ACF Elevator may not be substantially complete prior to the Phase 2 Term Commencement Date, (ii) subject to Landlord's obligation to complete the construction and installation of the ACF Elevator, the Phase 2 Term Commencement Date shall occur on the date on which Phase 2 (other than the ACF Elevator) is delivered to Tenant in the condition required by Section 3.1 of the Lease, and (iii) Base Rent (and Operating Costs and Taxes) payable with respect to the ACF Elevator shall commence on the date on which the ACF Elevator is delivered to Tenant in the condition required by Section 3.1 of the Lease, subject to acceleration on a day for day basis for each day of Tenant Delays applicable thereto.

5. Cost of Landlord's Work.

(a) General. All of Landlord's Base Building Work shall be performed at no cost to Tenant. Except for Landlord's Contribution (hereinafter defined), all of Tenant's Fitout shall be performed at Tenant's sole cost and expense.

(b) Work Costs. For purposes hereof, "**Work Costs**" means (i) all costs incurred by Landlord in connection with or reasonably allocated to Tenant's Fitout without mark-up, including without limitation the costs of permitting, constructing, coordinating and performing Tenant's Fitout, as affected by any changes made (or requested by Tenant) in accordance with Section 3(b) hereof and the costs of any third party construction/project manager(s) engaged by Landlord, less (ii) the Excluded Construction Costs (as hereinafter defined). With respect to costs incurred in connection with both Landlord's Base Building Work and Tenant's Fitout (including without limitation police details, rubbish removal and hoisting costs), such costs shall be allocated between Landlord's Base Building Work and Tenant's Fitout according to the volume of work in place the prior month (or another reasonable method). Tenant's Fitout shall be performed on a so-called "open book" basis.

(c) Value Engineering.

(i) Landlord shall provide Tenant with a detailed cost estimate of the Work Costs based on the approved Schematic Drawings using the CSI standard divisions cost estimate (the "**S/D Cost Estimate**"). The S/D Cost Estimate shall include a line item for the cost of any third party construction/project manager(s) engaged by or on behalf of Landlord. Tenant shall have a period of five (5) business days after receipt of the S/D Cost Estimate (or any revised S/D Cost Estimate, as the case may be), *time being of the essence*, to notify Landlord whether Tenant approves such S/D Cost Estimate, or that Tenant wishes to conduct value engineering in order to reduce the cost of Tenant's Fitout. If Tenant does not timely provide such notice, Tenant shall be deemed to have (A) approved such S/D Cost Estimate, and (B) elected not to conduct such value engineering. If Tenant elects to conduct value engineering, then (I) any actual delays to substantial completion of Landlord's Work to the extent arising from such value engineering shall be deemed to be Tenant Delays, and (II) until mutually approved (or deemed approved), Landlord and Tenant shall confer and negotiate reasonably and in good faith to reach agreement on the S/D Cost Estimate and the Schematic Drawings on which the S/D Cost Estimate is based.

(ii) Landlord shall provide Tenant with a detailed cost estimate of the Work Costs based on the approved Design Development Plans using the CSI standard divisions cost estimate (the "**D/D Cost Estimate**"). The D/D Cost Estimate shall include a line item for the cost of any third party construction/project manager(s) engaged by or on behalf of Landlord. Tenant shall have a period of five (5) business days after receipt of the D/D Cost Estimate (or any revised D/D Cost Estimate, as the case may be), *time being of the essence*, to notify Landlord whether Tenant approves such D/D Cost Estimate, or that Tenant wishes to conduct value engineering in order to reduce the cost of Tenant's Fitout. If Tenant does not timely provide such notice, Tenant shall be deemed to have (A) approved such D/D Cost Estimate, and (B) elected not to conduct such value engineering. If Tenant elects to conduct value engineering, then (I) any actual delays to substantial completion of Landlord's Work to the extent arising from such value engineering shall be deemed to be Tenant Delays, and (II) until mutually approved (or deemed approved), Landlord and Tenant shall confer and negotiate reasonably and in good faith to reach agreement on the D/D Cost Estimate and the Design Development Plans on which the D/D Cost Estimate is based.

(iii) Landlord shall provide Tenant with a detailed cost estimate of the Work Costs based on the Approved Plans using the CSI standard divisions cost estimate (the "**A/P Cost Estimate**"). The A/P Cost Estimate shall include a line item for the cost of any third party construction/project manager(s) engaged by or on behalf of Landlord. Tenant shall have a period of ten (10) business days after receipt of the A/P Cost Estimate (or any revised A/P Cost Estimate, as the case may be), *time being of the essence*, to notify Landlord whether Tenant approves such A/P Cost Estimate, or that Tenant wishes to conduct value engineering in order to reduce the cost of Tenant's Fitout. If Tenant does not timely provide such notice, Tenant shall be deemed to have (A) approved such A/P Cost Estimate, and (B) elected not to conduct such value engineering. If Tenant elects to conduct value engineering, then (I) any actual delays to substantial completion of Landlord's Work to the extent arising from such value engineering shall be deemed to be Tenant

Delays, and (II) until mutually approved (or deemed approved), Landlord and Tenant shall confer and negotiate reasonably and in good faith to reach agreement on the A/P Cost Estimate and the Approved Plans on which the A/P Cost Estimate is based.

(iv) The A/P Cost Estimate approved (or deemed approved) by Tenant is herein referred to as the "**Final Cost Estimate**."

(v) Promptly after approval of the A/P Cost Estimate, Landlord shall cause the schedule for the construction phase of Landlord's Work to be updated to reflect the construction of Tenant's Fitout, and shall deliver a copy thereof to Tenant.

(d) Landlord's Contribution. As an inducement to Tenant's entering into this Lease, Landlord shall pay for up to Twenty-Three Million Four Hundred Nine Thousand Seven Hundred Ten Dollars ($23,409,710) ("**Landlord's Contribution**") of the Work Costs other than the following costs (collectively, "**Excluded Construction Costs**"), which Excluded Construction Costs shall be paid for by Tenant within thirty (30) days of demand from time to time (but in no event more often than monthly): (i) the cost of acquiring or installing any of Tenant's Property (hereinafter defined), including without limitation telecommunications and computer equipment and all associated wiring and cabling, any de-mountable decorations, artwork and partitions, signs, and trade fixtures, or (ii) any so-called "soft costs"; provided, however, notwithstanding the foregoing, up to Two Million Three Hundred Twenty-Nine Thousand Seven Hundred Eighty Dollars ($2,340,971) of Landlord's Contribution may be used for Tenant's architectural, engineering and consultant fees and design and permitting costs and the cost of Tenant's wiring and cabling. Landlord shall not charge any supervisory or management fees with respect to Tenant's Fitout, provided that the reasonable out of pocket costs of any third party construction/project manager(s) engaged by Landlord shall be included in Work Costs. Tenant shall not be entitled to any unused portion of Landlord's Contribution. Notwithstanding anything to the contrary, if the Final Plans reflect that any portion of the Premises will be delivered in shell condition ("**Shell Space**"), then the portion of Landlord's Contribution allocable to the Shell Space (the "**Shell Space Allowance**") shall be held and disbursed by Landlord in accordance with Sections 5(d)(i) and (ii) below.

(i) In connection with Alterations to the Shell Space performed by Tenant after the applicable Term Commencement Date ("**Shell Space Work**"), Landlord shall, subject to Section 5(d)(ii) below, pay Landlord's Proportion (hereinafter defined) of the cost shown on each requisition (hereinafter defined) submitted by Tenant to Landlord within thirty (30) days of submission thereof by Tenant to Landlord until the entirety of the Shell Space Allowance has been exhausted. "**Landlord's Proportion**" shall be a fraction, the numerator of which is the Shell Space Allowance allocable to the Phase in which such Shell Space Work is being performed and the denominator of which is (A) the total contract price for such Shell Space Work (as evidenced by reasonably detailed documentation delivered to Landlord with the requisition first submitted by Tenant), less (B) those costs described in clauses (I) through (III) inclusive of the last sentence of this Section 5(d)(i) (as evidenced by reasonably detailed documentation delivered to Landlord with the requisition first submitted by Tenant). A "**requisition**" shall mean AIA Documents G- 702 and G-703 duly executed and certified by Tenant's architect and general contractor (accompanied by invoices from Tenant's contractors, vendors, service providers and consultants (collectively, "**Contractors**") and partial lien waivers and subordinations of lien, as specified in M.G.L. Chapter 254,

Section 32 ("**Lien Waivers**") with respect to the prior month's requisition, and such other documentation as Landlord or any Mortgagee may reasonably request) showing in reasonable detail the costs of the item in question or of the improvements installed to date in the Shell Space, accompanied by certifications executed by the Chief Executive Officer, Chief Financial Officer, Chief Operations Officer, or Vice President of Tenant that the amount of the requisition in question does not exceed the cost of the items, services and work covered by such requisition. Notwithstanding the foregoing, with respect to the first requisition only, Tenant shall not be required to deliver Lien Waivers at the time of the first requisition, but shall deliver the Lien Waivers and evidence of payment of the first requisition in full within five (5) days following payment of the Shell Space Allowance with respect to such first requisition (it being understood and agreed that Lien Waivers with respect to the prior month's requisition shall be submitted as part of each requisition after such first requisition). If Tenant does not submit its requisitions using an industry-standard form thereof so as to permit Landlord to confirm (y) costs to date and (z) that none of the costs are excluded pursuant to the provisions hereof, Landlord shall have the right, upon reasonable advance notice to Tenant, to inspect Tenant's books and records relating to each requisition in order to verify the amount thereof. Tenant shall submit requisition(s) no more often than monthly. For the purposes hereof, the cost to be so reimbursed by Landlord shall not include: (I) the cost of acquiring or installing any of Tenant's Property, including without limitation telecommunications and computer equipment and all associated wiring and cabling, any de-mountable decorations, artwork and partitions, signs, and trade fixtures, (II) any fees paid to Tenant, any Affiliate or Successor, and (III) any so-called "soft costs"; provided, however, notwithstanding the foregoing, up to ten percent (10%) of the Shell Space Allowance may be used for Tenant's architectural, engineering and consultant fees and design and permitting costs and the cost of Tenant's wiring and cabling.

(ii) Notwithstanding anything to the contrary herein contained: (A) Landlord shall have no obligation to advance funds on account of the Shell Space Allowance (1) until Landlord shall have received an original W-9 executed by Tenant, nor (2) more than once per month; (B) If Tenant fails to pay to Tenant's contractors the amounts paid by Landlord to Tenant in connection with any previous requisition(s), Landlord shall thereafter have the right to have the Shell Space Allowance paid directly to Tenant's contractors; (C) Landlord shall have no obligation to pay any portion of the Shell Space Allowance with respect to any requisition submitted after the date (the "**Outside Requisition Date**") which is twenty- four (24) months after the applicable Term Commencement Date; (D) Tenant shall not be entitled to any unused portion of the Shell Space Allowance; (E) Landlord's obligation to pay any portion of the Shell Space Allowance shall be conditioned upon there existing no default by Tenant in its obligations under the Lease at the time that Landlord would otherwise be required to make such payment (it being understood and agreed that if Tenant cures such default prior to the expiration of the notice and/or cure periods set forth in Section 20.1 of the Lease, Landlord shall make such payment promptly after the cure is effectuated); and (F) In addition to all other requirements hereof, Landlord's obligation to pay the final ten percent (10%) of the Shell Space Allowance shall be subject to simultaneous delivery of all unconditional lien waivers relating to items, services and work performed in connection with the Shell Space Work.

(iii) In the event Tenant owes Landlord any sums under or pursuant to the Lease at such time as Landlord is obligated pursuant to the provisions of this Section 5(d) to pay any portion of the Shell Space Allowance, Landlord shall have the right to offset said amount from such payment of the Shell Space Allowance.

(e) Responsibility for Costs.

(i) If the Final Cost Estimate discloses that the Work Costs exceed Landlord's Contribution (such excess, the "**Excess Costs**"), Tenant shall pay, within thirty (30) days after demand from time to time (but in no event more than monthly), Tenant's Proportion (hereinafter defined) of the Work Costs reflected on each requisition from Landlord, to which shall be attached invoices and/or other documentation supporting the requisition. "**Tenant's Proportion**" shall be a fraction, the numerator of which is the estimated Excess Costs, and the denominator of which is the estimated Work Costs. If Tenant fails to timely make any such payment in full, each day between such 30th day and the date on which Tenant makes such payment in full shall constitute a Tenant Delay.

(ii) After final completion of Tenant's Fitout with respect to each Phase, Landlord shall prepare and submit to Tenant a final reconciliation in sufficient detail to reasonably determine actual Work Costs (including without limitation all TF Punchlist Items) with respect to such Phase (each, a "**Final Reconciliation**"). Landlord shall use reasonable efforts to deliver the applicable Final Reconciliation to Tenant within ninety (90) days after final completion of Tenant's Fitout with respect to each Phase. Within thirty (30) days after delivery of each Final Reconciliation, Tenant shall pay to Landlord any remaining Excess Costs relative to such Phase (or Landlord shall refund to Tenant any amounts paid by Tenant in excess of the actual Excess Costs relative to such Phase).

SCHEDULE A

BASE BUILDING PLANS

Perkins and Will Architects
Drawing Control List
Construction Documents
238 Main Street Laboratory Addition

1. February 20, 2019

Index of Drawings

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P10-05	PLUMBING LEVEL 5 PLAN	●
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P10-07	PLUMBING LEVEL 7 PLAN	●
P10-08	PLUMBING LEVEL 8 PLAN	●
P10-09	PLUMBING LEVEL 9 PLAN	●
P10-10	PLUMBING LEVEL 10 PLAN	●
P10-11	PLUMBING LEVEL 11 PLAN	●
P10-12	PLUMBING LEVEL 12 PLAN	●
P10-13	PLUMBING MECHANICAL LEVEL 1 PLAN	●
P10-14	PLUMBING MECHANICAL LEVEL 2 PLAN	●
P10-15	PLUMBING ROOF PLAN	●
P11-02A	PLUMBING LEVEL P1A TENANT FLOOR PLAN	●
P11-02B	PLUMBING LEVEL P1B TENANT FLOOR PLAN	●
P44-01	PLUMBING GARAGE PART PLANS	●

09-MECHANICAL		
H00-01	HVAC LEGENDS AND GENERAL NOTES	●
H00-02	HVAC SCHEDULES (SHEET 1 OF 3)	●
H00-03	HVAC SCHEDULES (SHEET 2 OF 3)	●
H00-04	HVAC SCHEDULES (SHEET 3 OF 3)	●
H00-05	HVAC DETAILS (SHEET 1 OF 3)	●
H00-06	HVAC DETAILS (SHEET 2 OF 3)	●
H00-07	HVAC DETAILS (SHEET 3 OF 3)	●
H00-08	HVAC AIR HANDLING UNIT PLANS & ELEVATIONS	●
H00-09	HVAC ENERGY RECOVERY UNIT & GENERAL EXHAUST FAN PLANS & ELEVATIONS	●
H00-10	HVAC CHILLED WATER PIPING SCHEMATIC	●
H00-11	HVAC HOT WATER PIPING SCHEMATIC	●
H00-12	HVAC HOT WATER AND PROCESS CONDENSER WATER PIPING RISER DIAGRAMS	●
H00-13	HVAC HIGH PENTHOUSE HEAT RECOVERY PIPING RISER DIAGRAMS	●
H00-14	HVAC STAIRWELL PRESSURIZATION RISER DIAGRAM	●
H00-15	HVAC ELEVATOR VENTILATION RISER DIAGRAMS	●
H00-16	HVAC SUPPLY AIR DUCTWORK RISER DIAGRAMS	●
H00-17	HVAC EXHAUST AIR DUCTWORK RISER DIAGRAMS	●
H00-18	HVAC FUEL OIL PIPING DIAGRAM	●
H00-19	HVAC KONVEKTA LEGEND	●
H00-20	HVAC KONVEKTA AHU P&ID	●
H00-21	HVAC KONVEKTA PACKAGED HEATING UNIT P&ID	●
H00-22	HVAC KONVEKTA ERU P&ID	●
H00-23	HVAC KONVEKTA SUMP DIAGRAM	●
H04-00A	HVAC P0.5-P1 PARKING GARAGE PLAN EAST	●
HD04-01	HVAC DUCTWORK LEVEL 1 PLAN	●
HD04-01.5	HVAC DUCTWORK LEVEL 1.5 PLAN	●
HD04-02	HVAC DUCTWORK LEVEL 2 PLAN	●
HD04-03	HVAC DUCTWORK LEVEL 3 PLAN	●
HD04-04	HVAC DUCTWORK LEVEL 4 PLAN	●
HD04-05	HVAC DUCTWORK LEVEL 5 PLAN	●
HD04-06	HVAC DUCTWORK LEVEL 6 PLAN	●
HD04-07	HVAC DUCTWORK LEVEL 7 PLAN	●
HD04-08	HVAC DUCTWORK LEVEL 8 PLAN	●
HD04-09	HVAC DUCTWORK LEVEL 9 PLAN	●
HD04-10	HVAC DUCTWORK LEVEL 10 PLAN	●
HD04-11	HVAC DUCTWORK LEVEL 11 PLAN	●

HD04-12	HVAC DUCTWORK LEVEL 12 PLAN	●
HD04-13	HVAC DUCTWORK MECH. PENTHOUSE 1 LEVEL PLAN	●
HD04-14	HVAC DUCTWORK MECH. PENTHOUSE 2 LEVEL PLAN	●
HD04-15	HVAC DUCTWORK ROOF PLAN	●
HP04-01	HVAC PIPING 1 LEVEL PLAN	●
HP04-02	HVAC PIPING 2 LEVEL PLAN	●
HP04-03	HVAC PIPING 3 LEVEL PLAN	●
HP04-04	HVAC PIPING 4 LEVEL PLAN	●
HP04-05	HVAC PIPING 5 LEVEL PLAN	●
HP04-06	HVAC PIPING 6 LEVEL PLAN	●
HP04-07	HVAC PIPING 7 LEVEL PLAN	●
HP04-08	HVAC PIPING 8 LEVEL PLAN	●
HP04-09	HVAC PIPING 9 LEVEL PLAN	●
HP04-10	HVAC PIPING 10 LEVEL PLAN	●
HP04-11	HVAC PIPING 11 LEVEL PLAN	●
HP04-12	HVAC PIPING 12 LEVEL PLAN	●
HP04-13	HVAC PIPING MECH PENTHOUSE 1 LEVEL PLAN	●
HP04-14	HVAC PIPING MECH. PENTHOUSE 2 LEVEL PLAN	●
HP04-15	HVAC PIPING ROOF PLAN	●
10-ELECTRICAL		
E04-01	ELECTRICAL LEGEND, NOTES, AND SCHEDULES	●
E04-02	ELECTRICAL POWER DISTRIBUTION RISER DIAGRAM “A”	●
E04-03	ELECTRICAL POWER DISTRIBUTION RISER DIAGRAM “B”	●
E04-04	ELECTRICAL SCHEDULES AND DETAILS	●
E04-05	ELECTRICAL SCHEDULES AND DETAILS	●
E04-06	ELECTRICAL SCHEDULES AND DETAILS	●
E04-07	ELECTRICAL SCHEDULES AND DETAILS	●
E04-08	ELECTRICAL SCHEDULES AND DETAILS	●
E04-09	ELECTRICAL SCHEDULES AND DETAILS	●
E04-10	ELECTRICAL SCHEDULES AND DETAILS	●
E04-11	ELECTRICAL SNOW MELT AND HEAT TRACE DETAILS	●
E04-12	ELECTRICAL LUTRON LIGHTING CONTROL DETAILS 1	●
E04-13	ELECTRICAL LUTRON LIGHTING CONTROL DETAILS 2	●
E04-14	ELECTRICAL LUTRON LIGHTING CONTROL DETAILS 3	●
E04-15	ELECTRICAL LUTRON LIGHTING CONTROL DETAILS 4	●
E04-16	ELECTRICAL LUTRON LIGHTING CONTROL DETAILS 5	●
E04-21	ELECTRICAL LIGHTING PARKING GARAGE LEVEL P1 PLAN	●
E04-22	ELECTRICAL POWER PARKING GARAGE LEVEL P1 PLAN	●
E04-23	ELECTRICAL LIGHTING LEVEL 1 PLAN	●
E04-24	ELECTRICAL POWER LEVEL 1 PLAN	●
E04-25	ELECTRICAL LIGHTING AND POWER LEVEL 1.5 PLAN	●

E04-26	ELECTRICAL LIGHTING LEVEL 2 PLAN	●
E04-27	ELECTRICAL POWER LEVEL 2 PLAN	●
E04-28	ELECTRICAL LIGHTING AND POWER LEVEL 3 PLAN	●
E04-29	ELECTRICAL LIGHTING AND POWER LEVEL 4 PLAN	●
E04-30	ELECTRICAL LIGHTING AND POWER LEVEL 5 PLAN	●
E04-31	ELECTRICAL LIGHTING AND POWER LEVEL 6 PLAN	●
E04-32	ELECTRICAL LIGHTING AND POWER PLENUM LEVEL PLAN	●
E04-33	ELECTRICAL LIGHTING AND POWER LEVEL 7 PLAN	●
E04-34	ELECTRICAL LIGHTING AND POWERLEVEL 8 PLAN	●
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E04-36	ELECTRICAL LIGHTING AND POWER LEVEL 10 PLAN	●
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E04-39	ELECTRICAL LIGHTING AND POWER MECH. PENTHOUSE 1 PLAN	●
E04-40	ELECTRICAL LIGHTING AND POWER MECH. PENTHOUSE 2 PLAN	●
E04-41	ELECTRICAL LIGHTING AND POWER ROOF PLAN	●
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T-000	T-SERIES GENERAL SPECIFICATIONS	●
T-C100	TELECOMMUNICATIONS SITE PLAN	●
T-C101	TELECOMMUNICATIONS CONDUIT RISER SCHEMATIC	●
T-C101-M	TELECOMMUNICATIONS CONDUIT RISER SCHEMATIC-MASTER	●
T-C101-PI	TELECOMMUNICATIONS CONDUIT RISER SCHEMATIC - SITE 3 PHASE I	●
T-C102	TELELCOMMUNICATIONS GROUNDING SCHEMATIC	●
T-C102-M	TELECOMMUNICATIONS GROUNDING SCHEMATIC - MASTER	●
T-C102-PI	TELECOMMUNICATIONS CONDUIT RISER SCHEMATIC - SITE 3 PHASE I	●
T-C103	SMART BUILDING RISER SCHEMATIC	●
T-C201	LEVEL 01 COMMUNICATIONS LAYOUT	●
T-C202	LEVEL 02 COMMUNICATIONS LAYOUT	●
T-C203	LEVEL 04 (03-05 TYP) COMMUNICATIONS LAYOUT	●
T-C204	LEVEL 06 COMMUNICATIONS LAYOUT	●
T-C205	LEVEL 08 (07-12 TYP) COMMUNICATIONS LAYOUT	●
T-C206	LEVEL PH01 COMMUNICATIONS LAYOUT	●
T-C207	LEVEL PH02 COMMUNICATIONS LAYOUT	●
T-C208	LEVEL ROOF COMMUNICATIONS LAYOUT	●
T-C301	PART PLANS	●
T-C401	ELEVATIONS	●
T-S200	LEVEL P1 SECURITY PLAN TENANT SPACE	●
T-S201	LEVEL 1 SECURITY LAYOUT	●
T-S202	LEVEL 02 SECURITY LAYOUT	●

T-S203	LEVEL 03 (03-05 TYP) SECURITY LAYOUT	●
T-S204	LEVEL 6 SECURITY LAYOUT	●
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T-S206	LEVEL PH01 SECURITY LAYOUT	●
T-S207	LEVEL PH02 SECURITY LAYOUT	●
T-S208	LEVEL ROOF SECURITY LAYOUT	●
T-S601	SECURITY DETAILS #1	●
T-S602	SECURITY DETAILS #2	●
12-VERTICAL TRANSPORTATION		
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VT-102	ELEVATOR DETAILS	●
VT-103	ELEVATOR DETAILS	●

Perkins and Will Architects
Drawing Control List
Construction Documents
238 Main Street Laboratory Addition

2. February 20, 2019

Div #	Description
00 01 10_1	Table of Contents
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01 21 00_1	Allowances
01 23 00_1	Alternates
01 25 00_1	Substitution Procedures
01 26 00_1	Contract Modification Procedures
01 29 00_1	Payment Procedures
01 31 00_1	Management and Coordination
01 32 00_1	Construction Progress Documentation
01 32 33_1	Photographic Documentation
01 33 00_1	Submittal Procedures
01 40 00_1	Quality Requirements
01 42 00_1	References
01 50 00_1	Temporary Facilities and Controls
01 60 00_1	Product Requirements
01 73 00_1	Execution Requirements
01 73 29_1	Cutting and Patching
01 74 19_1	Construction Waste Management and Disposal
01 77 00_1	Closeout Procedures
01 78 23_1	Operation and Maintenance Data
01 78 39_1	Project Record Documents
01 79 00_1	Demonstration and Training
01 81 13_1	Sustainable Design Requirements
01 81 19_1	Construction Indoor Air Quality Requirements
01 90 00_1	General Commissioning Requirements
01 91 19_1	Building Enclosure Commissioning
03 30 00_1	Cast-in-Place Concrete
03 49 00_1	Glass Fiber Reinforced Concrete (GFRC)
04 20 00_1	Unit Masonry
04 23 00_1	Reinforced Unit Masonry
04 42 13_1	Exterior Stone Base
05 12 00_1	Structural Steel Framing
05 12 13_1	Architecturally-Exposed Structural Steel Framing
05 30 00_1	Metal Decking
05 40 00_1	Cold-Formed Metal Framing
05 50 00_1	Metal Fabrications

Div #	Description
05 51 13_1	Metal Pan Stairs
05 51 19_1	Metal Grating Stairs
05 52 15_1	Stainless Steel Pipe and Tube Railings
00 01 10_1	Table of Contents
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05 70 00_1	Decorative Metals
06 10 00_1	Rough Carpentry
06 16 00_1	Sheathing
06 41 16_1	Plastic-Laminate-Faced Architectural Cabinets
06 64 00_1	Plastic Paneling
07 13 26_1	Self-Adhering Sheet Waterproofing
07 18 00_1	Traffic Coatings
07 21 00_1	Thermal Insulation
07 21 01_1	Spray on Insulation
07 27 13_1	Modified Bituminous Sheet Air Barriers
07 27 26_1	Fluid-Applied Membrane Air Barriers
07 42 16_1	Insulated Core Metal Wall Panels
07 42 19_1	Metal Plate Wall Panels
07 42 20_1	Metal Plate Ceiling Panels
07 54 23_1	Thermoplastic-Polyolefin (TPO) Roofing
07 55 56_1	Fluid-Applied Protected Membrane Roofing
07 62 00_1	Sheet Metal Flashing and Trim
07 65 11_1	Silicone Sheet Transition Assembly
07 81 00_1	Applied Fireproofing
07 84 13_1	Penetration Firestopping
07 84 46_1	Fire- Resistive Joint Systems
07 92 00_1	Joint Sealants
07 95 00_1	Expansion Control
08 11 13_1	Hollow Metal Doors and Frames
08 14 16_1	Flush Wood Doors
08 17 00_1	Integrated Door Opening Assemblies
08 30 00_1	Specialty Doors Systems
08 31 13_1	Access Doors and Frames
08 41 13_1	Aluminum - Framed Entrances and Storefronts
08 41 26_1	All-Glass Entrances and Storefronts
08 44 10_1	Unitized Metal-Framed Curtain Walls
08 71 00.10_1	Door Hardware
08 71 01_1	Door Hardware Schedule (Future By Others P Level)
08 80 00_1	Glazing
08 83 00_1	Mirrors
08 88 23_1	Structural Glass Walls

Div #	Description
08 90 00_1	Louvers and Vents
09 21 16_1	Gypsum Board Shaft Wall Assem blies
09 22 16_1	Non-Structural Metal Framing
09 24 00_1	Cement Plastering
09 25 16_1	Venetian Plaster Finish System
09 27 13_1	Glass-Fiber-Reinforced Gypsum Fabrications
00 01 10_1	Table of Contents
09 29 00_1	Gypsum Board
09 30 00_1	Tiling
09 51 23_1	Acoustical Tile Ceilings
09 65 00_1	Resilient Flooring
09 65 13_1	Resilient Base and Accessories
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09 66 23_1	Resinous Matrix Terrazzo Flooring
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09 96 00_1	High-Performance Coatings
10 21 13_1	Toilet Compartments
10 26 00_1	Wall and Door Prot ection
10 30 05_1	Prefabricated Fireplace
10 44 13_1	Fire Protection Cabinets
10 46 00_1	Photoluminescent Egress Marking System
10 81 00_1	Toilet Accessories
11 13 16_1	Loading Dock Seals and Shelters
12 24 13_1	Roller Shades
12 36 61_1	Solid Surface Assem blies
12 48 16_1	Entrance Floor Grilles
14 21 23_1	Electric Traction Passenger Elevators
21 00 00_1	Fire Protection
22 00 00_1	Plumbing
23 00 00_1	Heating Ventilating and Air Conditioning
26 00 00_1	Electrical
27 00 00_1	Communications
27 05 28_1	Pathways for Communications Systems
27 05 53_1	Identification for Communications Systems
27 06 10_1	Schedules for Structured Cabling and Enclosures
27 08 00_1	Commissioning of Communications
27 11 16_1	Communications Cabinets Racks Frames and Enclosures
27 11 19_1	Communications Termination Blocks and Patch Panels
27 11 23_1	Communications Cable Management and Ladder Rack

Div #	Description
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27 13 13_1	Communications Copper Backbone Cabling
27 13 23_1	Communications Optical Fiber Backbone Cabling
27 15 13_1	Communications Copper Horizontal Cabling
27 15 43_1	Communications Faceplates and Connectors
28 00 00_1	Electronic Safety and Security
28 31 00_1	Fire Alarm

SCHEDULE B

MATRIX

238 Main Street Laboratory Addition - Multi-Tenant

Cambridge, MA

Office/Lab Landlord/Tenant Responsibilities Matrix **May 2, 2018**

Rev Date: April 04, 2019

Tenant Floors 7-10

	DESCRIPTION	SHELL/CORE	TENANT
Site Work	Perimeter sidewalks, street curbs, trees, parking lot paving.	X	
	Landscaping.	X	
	Two or more 4” telephone conduits from diverse locations, 15’ outside building into telephone demark room at 238 Main Street.	X	
	Two Cable TV 4” conduits from 15’ outside building into telephone demark room at 238 Main Street.	X	
	Natural gas service to building for base building systems.	X	
	Sanitary sewer connection including lab waste connection	X	
	Domestic water service to building.	X	
Code Compliance	Building construction in accordance with requirements of Massachusetts State Building Code, 9th edition.	X	X
	Use Group B-Business	X	X
	Occupancy Category III	X	

	Group B, Business occupancy laboratories according to the provisions of 780 CMR 9th edition (2015 IBC amended) Sections 304.1, 307.1, and 414.2; with Group H, High Hazard occupancy areas according to the provisions of 780 CMR 9th edition Sections 307.1,403,414,415,503 and 504 and 508.2 and all other applicable codes, rules and regulations.		X
Structure	Floor live load capacity to be 100psf at first floor, 100 at floors 2-12, Mechanical Rooms will include 150 psf allowance or specific equipment weights. Parking Levels will be as required per code.	X	
	Live load increases for special tenant loads at floors and roof.		X
	Floor to floor heights: first floor and second floor 20’-0”; upper floors 15’-0”. P1 level 20’-0”, P2-P6 10’-0” Penthouse PH1 22’-0”, PH2 20’-0”	X	
	Lateral Force Resisting System to be designed and constructed as a reinforced concrete shearwall core with supplemental structural steel moment frames designed, constructed and fireproofed as required by the Building Code.	X	
	Structural steel stub columns to be provided to accommodate future tenant supplied dunnage and equipment. Design to be based on 150 psf allowance in designated Tenant rooftop mechanical zones only.	X	
	Dunnage at roof for tenant equipment designed and verified by tenant structure engineer.		X
	Framed openings for added shafts needed by Tenant not provided in the core and shell for potential tenant use		X
	Miscellaneous metal items (lintels, elevator sills, canopy framing, etc.) related to base building construction.	X	

	Miscellaneous metal items and concrete pads related to tenant fit-out.		X
Exterior	Exterior wall consisting of predominately glazed curtain wall.	X	
	Ground floor ‘storefront’ systems at retail entries consisting of thermally-broken aluminum mullions with painted exterior finish, 1” insulating glass units. Louvers are provided for intake and exhaust air.	X	
	Truck door and parking doors, electrically operated.	X	
	Penthouse wall consisting of curtain wall and louvers.	X	
	Additional penthouse and/or screening for tenant equipment, to be built in accordance with base building design and City requirements		X
Roofinq	Roofing system consisting of single-ply TPO with rigid insulation.	X	
	Walkway pads to base building mechanical equipment.	X	
	Walkway pads to Tenant mechanical equipment.		X
	Landscaping and Paving at 6th floor Roof Terrace	X	
	Landscaping at 2nd floor Roof Terrace	X	
Common Areas	Finished first floor building lobby and egress corridors, including terrazzo flooring, drywall and	X	
	suspended ceilings and appropriate accent lighting.		
	Finished toilet rooms with thin-set porcelain tile floors and walls, drywall/acoustic ceilings, and solid surface lavatory counters. One shower room in each toilet room.	X	
	Janitor, electrical and telephone closets.	X	
	Finished exit stairways with painted walls.	X	

	Loading dock area with 4 truck/dumpster bays with 2 levelers.	X	
	First Floor, Second Floor and Parking Levels mechanical/electrical rooms for base building.	X	
	P1 and First Floor mechanical rooms for Tenant Systems, partitions, lights and sprinklers for CO only.	X	
	P1 floor room for pH tanks including dunnage.	X	
	Doors and frames at common areas: hollow metal	X	
	frames; hollow metal doors at service areas, solid core wood doors at other areas, and lever hardware		
	Doors, frames, and hardware at Tenant areas.		X
Elevators	Total of 5 passenger elevators:	X	
	Two machine room less (MRL) passenger elevators with 4,000 pound capacity and one MRL passenger elevator with 3,500 pound capacity and quality cab finishes.		
	Passenger elevators serve floors 1-12		
	Two high speed traction elevators with 4,000 pound capacity and quality cab finishes. Passenger elevators serve floors 1-12 and PH 1-2.		
	One MRV freight elevator with 5,000 pound capacity serving levels P1, Floors 1-12 and PH 12 respectively located adjacent to the Loading Dock.	X	X
	One future Tenant(s) MRL elevator with 3,500 pound capacity. Limited to three stops, including P1 and the 9th floor. For animal care facility use.		
Window Treatment	Two passenger garage elevators with 3,500 pound capacity serving P1-P6 and First Floor	X	
	Building standard shades for all windows- furnished.	X	
	Building standard shades for all windows, installation.		X
Tenant Areas	Insulation at exterior walls.	X	

	Drywall and paint at inside face of exterior wall and window sills.		X
	Partitions, column covers, ceilings, flooring, painting, finishes, doors, millwork, and all build-out within tenant area.		X
	Interior Wall Construction: 3 5/8” metal studs, 16”0c, 5/8” gypsum wallboard. Alternate materials are acceptable with Landlord approval.		X
	Tenant side of non rated core walls: 5/8” gypsum wallboard.		
	Column Covers: minimum gypsum wallboard at exterior column bay. Interior column finishes as approved by Landlord. Columns cannot be left exposed due to fireproofing.		X
	Interior Ceiling Treatment: ceilings may be left exposed, open to above or finished with acoustical tile and/or gypsum wallboard.		X
	Tenant Entry Doors: tenant can replace Base Building Doors with their own design. 1 hour fire rating to be maintained.		X
	Shaft enclosures for base building systems.	X	
	Shaft enclosures for any tenant-driven base building upgrade and dedicated tenant systems.		X
Plumbinq	Domestic sanitary waste piping for Base Building and Tenant use.	X	
	Lab waste piping connection within building for Tenant use.	X	
	Storm system connection and roof drainage system.	X	
	Secondary storm drainage system.	X	

Natural gas service to building for Base Building, potential Laboratory Tenant generator use and retail use. Gas delivered to the building at 2 psi (elevated pressure) w/ an estimated total of 57,752 CFH. Stubs for future retail tenant spaces @ 2 psi. Retail capacity available is: • Large ground level retail tenant spanning 238 Main entire west ground floor and Laboratory Addition entire west ground floor= 3,000 CFH	X	
Tenant gas service if required, from base building connection, including meter, riser and distribution piping for Tenant services.		X
Domestic cold water service to building and domestic cold water booster pump system.	X	
Potable and non-potable risers with valve/cap connections at each floor for Tenant use. Refer to plumbing riser diagrams.	X	
Potable cold water distribution to Base Building equipment and common areas.	X	
Base Building toilet/janitor core including cold water, hot water, waste and vent systems.	X	
Wet column including potable cold water, waste, vent systems.	X	
Potable and non-potable distribution piping from Base Building risers to Tenant areas. Refer to plumbing riser diagrams.		X
Distribution piping from wet columns.		X
Lab waste risers with cap connections on each floor for tenant use. Six 4” lab waste risers. Two 4” stubs per floor (45 DFU ea.)	X	

	Installation and commissioning of pH neutralization system for lab waste common for Building. Landlord will charge tenant proportionate share of installation cost of the pH system. 2,000 gallon total capacity pH system. 200 GPM continuous treatment. 18 GPM per floor.	X	
	Provide connections to pH neutralization system for Tenant lab waste		X
	Lab vent distribution system from lab vent risers.		X
	Tenant potable and non-potable hot water equipment and distribution system.		X
	Air compressor and distribution system.		X
	Vacuum pump and distribution system.		X
	RODI equipment and distribution system.		X
	Gas cylinders and distribution system (ie: nitrogen co2, argon, etc.)		X
	Tempered hot water heater and distribution piping to Tenant pH neutralization system area eyewash/shower unit. System shall have valve/cap connection for tenant use.		X
	Tenant tempered water eyewash/showers and distribution piping.		X
Fire Protection	Combination sprinkler/standpipe system with fire department valves and based on ordinary hazard occupancy.	X	
	Fire service and double-check valve assembly.	X	
	Fire pump, controller, test header.	X	
	Alarm check valve and Siamese connection.	X	
	Floor control valve assemblies and test drains.	X	

	Sprinkler coverage to all core areas.	X	
	Branch distribution with upright heads at 130 SF spacing within Lab Tenant areas. 225 SF spacing within Office areas.	X	
	Flow switches, tamper switches, pressure switches.	X	
	Modification of sprinkler piping and head layout to suit tenant build-out and Tenant hazard index. Sprinkler heads in spaces finished without ceilings shall be bronze upright or pendant.		X
	Specialty fire protection systems, ie: pre-action type, FM-200, etc.		X
HVAC	Air handler capacity, .25 cfm/sf for office. 2.0 cfm/sf for lab areas of 100% outside air assuming a split of 60% lab, 40% office for areas located on Levels 2-4 and 1.5 cfm/sf for lab areas of 100% outside air assuming a split of 60% lab, 40% office for areas located on 5-12.	X	
	First Floor Retail Areas shall provide their own outdoor air and exhaust through the perimeter louvers at level one.	N/A	N/A
	Equipment, controls and equipment rooms for 24 hour cooling systems for Tenant areas		X
	Occupant load for heating and cooling systems design based on 400 sf/person in lab areas and 150 sf/person in office areas	X	
	Vertical general exhaust ductwork risers	X	
	Supply, return, & toilet exhaust duct risers for base building systems	X	
	Supply, return & exhaust ductwork for horizontal distribution for tenant systems		X

Dedicated Location for Specialty Tenant exhaust systems for general exhaust, lab exhaust and fume hood exhausts. All vertical risers and horizontal ductwork and associated fans.		X
Supply, return, and exhaust system, including ductwork, control boxes, grilles, registers, & diffusers in tenant areas.		X
2,400 ton chilled water cooling capacity for base building air handling systems. 3,200 ton condenser water cooling capacity for base building systems. 600 tons of process condenser water available for Tenant use. 200 tons for 1st Floor Retail Tenanst and 400 tons available for floors 2 through 12. See contract drawing riser diagram for capacity per floor.	X	
40,000 MBH-gas-fired hot water boiler plant in Penthouse serving new air handlers and vertical risers with valve and cap connections for tenant piping on each floor. See contract drawing riser diagram for capacity per floor.	X	
Additional hot water or steam boilers for tenant systems.		X
Condenser and hot water risers and distribution for base building.	X	
Condenser and hot water distribution system within tenant areas to serve tenant HVAC and baseboard radiation.		X
Baseboard radiation, recommended by Landlord, Tenant’s option		X
Baseboard radiation cover - provide	X	
Baseboard radiation cover - install		X
Automatic temperature control system for base building.	X	

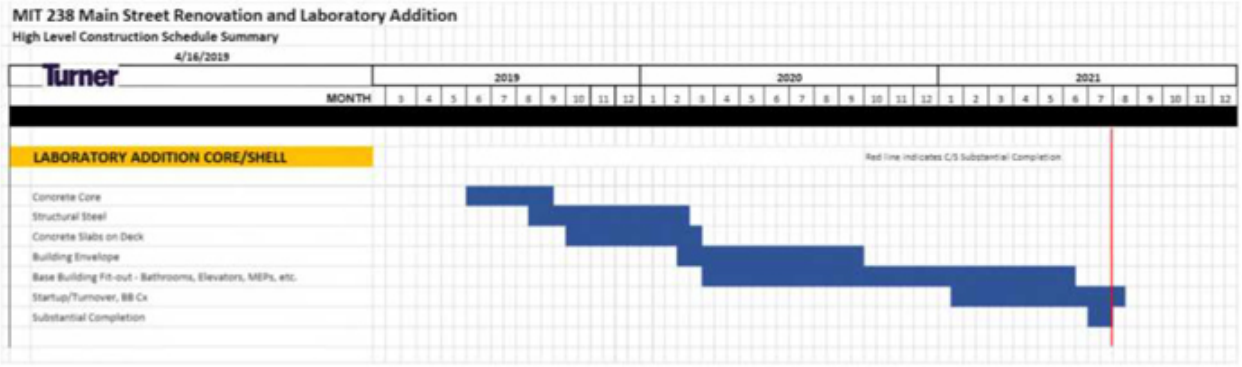
	Automatic temperature control system for tenant areas and systems.		X
Electric	Two Eversource Transformer vaults with five (5) utility-supplied 13.8kV - 480/277V transformers. One vault with (2) transformers shall back feed 238 Main St. and feed the garage. The other vault with (3) transformers shall feed the Building 3 services.	X	
	Conductors, Eversource metering equipment and circuit breakers to Tenant areas from base- building busway at each tenant floor		X
	480/277V, 3 phase, 4 wire main switchboards, three (3) @ 4000 amp, utility metered, for base building systems.	X	
	480/277, 3 phase, 4 wire, (2) @ 2000 amp nonutility metered bus-duct riser for tenant use. Nominal capacity of 15 watts/SF for lab and 8 watts/SF for office.	X	
	Terminal unit power.		X
	Rooftop 1500 kW emergency generator for base building life safety systems, including fuel storage, transfer system, and sound-attenuated enclosure	X	
	Rooftop Standby Generator maximum 600kw for tenant systems and equipment, including fuel storage, transfer system, and sound-attenuated enclosure.		X
	Provide connections to Building Common Rooftop Standby Generator for tenant systems and equipment		X
	Automatic transfer from normal to emergency power for building life safety systems and selected mechanical loads	X	
	Tenant automatic transfer switch(es) for transfer from normal to standby power.		X
	Electric closets at floors for base building systems and core areas.	X	

	480/277 volt power to Tenant dedicated HVAC systems.		X
	Additional electric closets for tenant areas.		X
	Power distribution for tenant areas. Match existing units or approved equal.		X
	Electric Metering		X
	Addressable Fire Command Center, Fire Alarm devices to Base Building common areas, mechanical/electrical rooms and risers for Tenant expansion.	X	
	Fire Alarm system and risers.	X	
	Fire Alarm devices within Tenant areas, connected to Base Building risers and addressable Fire Command Center.		X
	Lighting and controls in common and base building areas	X	
	Lighting and controls in tenant areas.		X
	Building lightning protection system and Base Building Equipment.	X	
	Tenant equipment lightning protection system extension.		X
Technology	Telephone/data system, including service, wiring, closets, and distribution.		X
	Multiple Telecommunications entrances for diverse service providers to Building 3 will be	X	
	provided: Verizon, Comcast, Level 3 from Demarc Room in Level P1		
	Base Building telecommunication demarc rooms, riser closets, and empty conduit riser system for continuous, secure pathway.	X	

Base Building Security System to include exterior doors and elevator lobby access in conjunction with Elevator Destination Management.	X	
Tenant security system (panels, wiring, readers, cameras, management and storage systems) for tenant areas to be iCIass compatible to coordinate and communicate with base building system.		X
Multi-Tech card readers with Mobile Access and Secure Identity Object (SIO) support via iCIass building credentials.	X	
Electronic Visitor Management system with online access for guest entry	X	
Conduit pathway to rooftop for access to GPS, Satellite, and other such services	X	
Accommodations for secure network access to base-building systems for Smart Office support	X	
Smart Office systems, controls, wiring, programming, licensing.		X

SCHEDULE C

PRELIMINARY SCHEDULE



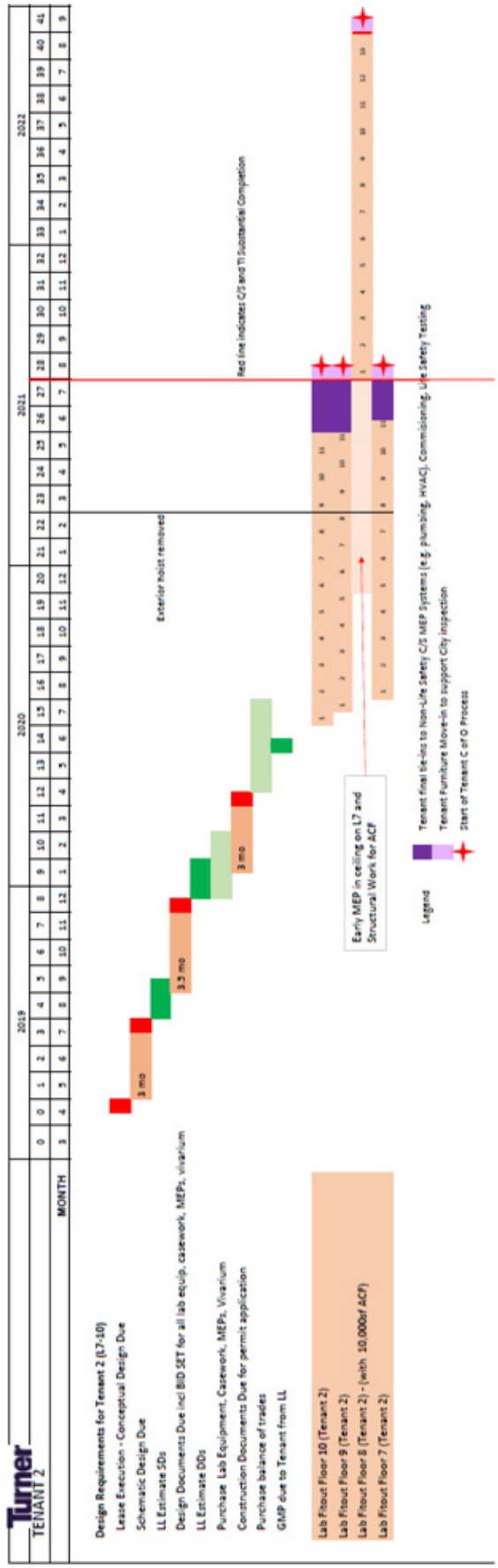

Turner
TENANT 2
MONTH
2019
2020
2021
2022
Design Requirements for Tenant 2 (L7-10)
Lease Execution - Conceptual Design Due
Schematic Design Due
LL Estimate SDs
Design Documents Due incl BID SET for all lab equip, casework, MEPs, vivarium
LL Estimate DDs
Purchase Lab Equipment, Casework, MEPs, Vivarium
Construction Documents Due for permit application
Purchase balance of trades
GMP due to Tenant from LL
Lab Fitout Floor 10 (Tenant 2)
Lab Fitout Floor 9 (Tenant 2)
Lab Fitout Floor 8 (Tenant 2) - (with 10,000sf ACF)
Lab Fitout Floor 7 (Tenant 2)
3 mo
3.5 mo
3 mo
Exterior hoist removed
Red line indicates C/S and TI Substantial Completion
Early MEP in ceiling on L7 and Structural Work for ACF
Legend
Tenant final tie-ins to Non-Life Safety C/S MEP Systems (e.g. plumbing, HVAC), Commissioning, Life Safety Testing
Tenant Furniture Move-in to support C/O inspection
Start of Tenant C of O Process

EXHIBIT 6

INTENTIONALLY OMITTED

EXHIBIT 7

FORM OF LETTER OF CREDIT

L/C DRAFT LANGUAGE

IRREVOCABLE STANDBY LETTER OF CREDIT NUMBER

ISSUE DATE: _____

ISSUING BANK:
SILICON VALLEY BANK
3003 TASMAN DRIVE
2ND FLOOR, MAIL SORT HF210
SANTA CLARA, CALIFORNIA 95054

BENEFICIARY:

_____
_____
_____
_____

APPLICANT:

_____
_____
_____
_____

AMOUNT: US$ (AND XX/100 U.S. DOLLARS)

EXPIRATION DATE:

PLACE OF EXPIRATION: ISSUING BANK'S COUNTERS AT ITS ABOVE ADDRESS

WE HEREBY ESTABLISH OUR IRREVOCABLE LETTER OF CREDIT IN YOUR FAVOR FOR ACCOUNT OF THE APPLICANT UP TO AN AGGREGATE AMOUNT NOT TO EXCEED AND /100 US DOLLARS ($.) AVAILABLE BY YOUR DRAFT(S) DRAWN ON OURSELVES AT SIGHT IN THE FORM OF EXHIBIT "A" ATTACHED HERETO.

PARTIAL DRAWS AND MULTIPLE PRESENTATIONS ARE ALLOWED.

ALL DEMANDS FOR PAYMENT SHALL BE MADE BY PRESENTATION OF YOUR DRAFT(S), AS SPECIFIED ABOVE ON A BUSINESS DAY AT OUR OFFICE (THE "BANK'S OFFICE") AT: SILICON VALLEY BANK, 3003 TASMAN DRIVE, MAIL SORT

HF 210, SANTA CLARA, CA 95054, ATTENTION: GLOBAL TRADE FINANCE. AS USED IN THIS LETTER OF CREDIT, “BUSINESS DAY” SHALL MEAN ANY DAY OTHER THAN A SATURDAY, SUNDAY OR A DAY ON WHICH BANKING INSTITUTIONS IN THE STATE OF CALIFORNIA ARE AUTHORIZED OR REQUIRED BY LAW TO CLOSE.

FACSIMILE PRESENTATIONS ARE ALSO PERMITTED. SHOULD BENEFICIARY WISH TO MAKE A PRESENTATION UNDER THIS LETTER OF CREDIT ENTIRELY BY FACSIMILE TRANSMISSION IT NEED NOT TRANSMIT THE ORIGINAL OF THIS LETTER OF CREDIT AND AMENDMENTS, IF ANY. EACH FACSIMILE TRANSMISSION SHALL BE MADE AT: (408) 496-2418 OR (408) 969-6510; AND UNDER CONTEMPORANEOUS TELEPHONE ADVICE TO: (408) - OR (408) - , ATTENTION: GLOBAL TRADE FINANCE. ABSENCE OF THE AFORESAID TELEPHONE ADVICE SHALL NOT AFFECT OUR OBLIGATION TO HONOR ANY DRAW REQUEST. IN CASE OF FACSIMILE DRAWING, THE ORIGINAL DOCUMENTS ARE NOT REQUIRED FOR PRESENTATION.

THIS LETTER OF CREDIT IS TRANSFERABLE ONE OR MORE TIMES, BUT IN EACH INSTANCE ONLY TO A SINGLE BENEFICIARY AS TRANSFEREE AND FOR THE THEN AVAILABLE AMOUNT, ASSUMING SUCH TRANSFER TO SUCH TRANSFEREE WOULD BE IN COMPLIANCE WITH THEN APPLICABLE LAW AND REGULATION, INCLUDING BUT NOT LIMITED TO THE REGULATIONS OF THE U.S. DEPARTMENT OF TREASURY AND U.S. DEPARTMENT OF COMMERCE. AT THE TIME OF TRANSFER, THE ORIGINAL LETTER OF CREDIT AND ORIGINALS OR COPIES OF ALL AMENDMENTS, IF ANY, TO THIS LETTER OF CREDIT MUST BE SURRENDERED TO US AT OUR ADDRESS INDICATED IN THIS LETTER OF CREDIT TOGETHER WITH OUR TRANSFER FORM ATTACHED HERETO AS EXHIBIT “B” DULY EXECUTED. APPLICANT SHALL PAY OUR TRANSFER FEE OF % OF 1% OF THE TRANSFER AMOUNT (MINIMUM US$250.00) UNDER THIS LETTER OF CREDIT.

THIS LETTER OF CREDIT SHALL EXPIRE AT OUR OFFICE ON , 20 (THE “STATED EXPIRATION DATE”). IT IS A CONDITION OF THIS LETTER OF CREDIT THAT THE STATED EXPIRATION DATE SHALL BE DEEMED AUTOMATICALLY EXTENDED WITHOUT AMENDMENT FOR SUCCESSIVE ONE (1) YEAR PERIODS FROM SUCH STATED EXPIRATION DATE, UNLESS AT LEAST THIRTY (30) DAYS PRIOR TO SUCH STATED EXPIRATION DATE (OR ANY ANNIVERSARY THEREOF) WE SEND YOU A WRITTEN NOTICE AT YOUR ABOVE ADDRESS BY NATIONALLY RECOGNIZED OVERNIGHT COURIER WITH RECEIPTED DELIVERY (SUCH AS UPS OR FEDEX) OR BY CERTIFIED MAIL (RETURN RECEIPT REQUESTED), THAT WE ELECT NOT TO CONSIDER THIS LETTER OF CREDIT EXTENDED FOR ANY SUCH ADDITIONAL PERIOD. A COPY OF SUCH NON-EXTENSION NOTICE SHALL ALSO BE SENT TO AT , HOWEVER LACK OF RECEIPT OF SUCH COPY SHALL NOT INVALIDATE OUR NON-EXTENSION NOTICE TO THE BENEFICIARY. IN THE EVENT THAT THIS LETTER OF CREDIT IS NOT EXTENDED FOR AN ADDITIONAL PERIOD AS PROVIDED ABOVE, YOU MAY DRAW THE ENTIRE AMOUNT AVAILABLE HEREUNDER.

IF THIS ORIGINAL STANDBY LETTER OF CREDIT IS LOST, STOLEN OR DESTROYED, WE WILL ISSUE YOU A "CERTIFIED TRUE COPY" OF THIS STANDBY LETTER OF CREDIT UPON OUR RECEIPT OF YOUR INDEMNITY LETTER TO SILICON VALLEY BANK WHICH WILL BE SENT TO YOU UPON OUR RECEIPT OF YOUR REQUEST THAT THIS STANDBY LETTER OF IS LOST, STOLEN, OR DESTROYED.

IF THE ORIGINAL OF THIS STANDBY LETTER OF CREDIT IS MUTILATED, WE WILL ISSUE YOU A REPLACEMENT STANDBY LETTER OF CREDIT WITH THE SAME NUMBER, DATE AND TERMS AS THE ORIGINAL UPON OUR RECEIPT OF THE MUTILATED STANDBY LETTER OF CREDIT.

IN ORDER TO CANCEL THIS LETTER OF CREDIT PRIOR TO EXPIRATION, YOU MUST RETURN THIS ORIGINAL LETTER OF CREDIT AND ANY AMENDMENTS HERETO TO OUR COUNTERS WITH A STATEMENT SIGNED BY YOU STATING THAT THE LETTER OF CREDIT IS NO LONGER REQUIRED AND IS BEING RETURNED TO THE ISSUING BANK FOR CANCELLATION.

WE HEREBY AGREE WITH YOU THAT THE DRAFTS DRAWN UNDER AND IN ACCORDANCE WITH THE TERMS AND CONDITION OF THIS LETTER OF CREDIT SHALL BE DULY HONORED WITHIN TWO (2) BUSINESS DAYS AFTER THE DATE OF PRESENTMENT.

WE HEREBY AGREE WITH YOU THAT DRAFTS DRAWN UNDER AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS LETTER OF CREDIT WILL BE DULY HONORED UPON PRESENTATION TO US ON OR BEFORE THE EXPIRATION DATE OF THIS LETTER OF CREDIT OR ANY AUTOMATICALLY EXTENDED EXPIRATION DATE.

IF ANY INSTRUCTIONS ACCOMPANYING A DRAWING UNDER THIS LETTER OF CREDIT REQUEST THAT PAYMENT IS TO BE MADE BY TRANSFER TO YOUR ACCOUNT WITH ANOTHER BANK, WE WILL ONLY EFFECT SUCH PAYMENT BY FED WIRE TO A U.S. REGULATED BANK, AND WE AND/OR SUCH OTHER BANK MAY RELY ON AN ACCOUNT NUMBER SPECIFIED IN SUCH INSTRUCTIONS EVEN IF THE NUMBER IDENTIFIES A PERSON OR ENTITY DIFFERENT FROM THE INTENDED PAYEE.

THIS LETTER OF CREDIT IS SUBJECT TO THE INTERNATIONAL STANDBY PRACTICES (ISP98), INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 590.

SILICON VALLEY BANK,

AUTHORIZED SIGNATURE	AUTHORIZED SIGNATURE

IRREVOCABLE STANDBY LETTER OF CREDIT NUMBER _____

EXHIBIT "A"

DATE: REF. NO. _____

AT SIGHT OF THIS DRAFT

PAY TO THE ORDER OF _____ US$ _____

USDOLLARS _____

_____

DRAWN UNDER SILICON VALLEY BANK, SANTA CLARA, CALIFORNIA, STANDBY LETTER OF CREDIT NUMBER NO. _____ DATED _____

TO: SILICON VALLEY BANK
3003 TASMAN DRIVE
SANTA CLARA, CA 95054

_____
(BENEFICIARY'S NAME)

_____
Authorized Signature

GUIDELINES TO PREPARE THE DRAFT

1. DATE: ISSUANCE DATE OF DRAFT.
2. REF. NO.: BENEFICIARY'S REFERENCE NUMBER, IF ANY.
3. PAY TO THE ORDER OF: NAME OF BENEFICIARY AS INDICATED IN THE L/C (MAKE SURE BENEFICIARY ENDORSES IT ON THE REVERSE SIDE).
4. US$: AMOUNT OF DRAWING IN FIGURES.
5. USDOLLARS: AMOUNT OF DRAWING IN WORDS.
6. LETTER OF CREDIT NUMBER: SILICON VALLEY BANK'S STANDBY L/C NUMBER THAT PERTAINS TO THE DRAWING.
7. DATED: ISSUANCE DATE OF THE STANDBY L/C.
8. BENEFICIARY'S NAME: NAME OF BENEFICIARY AS INDICATED IN THE L/C.
9. AUTHORIZED SIGNATURE: SIGNED BY AN AUTHORIZED SIGNER OF BENEFICIARY.

IF YOU NEED FURTHER ASSISTANCE IN COMPLETING THIS DRAFT, PLEASE CALL OUR L/C PAYMENT SECTION AT 408-654-6274 OR 408-654-7716

IRREVOCABLE STANDBY LETTER OF CREDIT NUMBER _____

EXHIBIT "B"

FORM OF TRANSFER FORM

DATE:

TO: SILICON VALLEY BANK
3003 TASMAN DRIVE
SANTA CLARA, CA 95054 ATTN:
GLOBAL TRADE FINANCE

RE: IRREVOCABLE STANDBY LETTER OF CREDIT
NO. _____ ISSUED BY SILICON VALLEY BANK,
SANTA CLARA

STANDBY LETTERS OF CREDIT

L/C AMOUNT: _____

GENTLEMEN:

FOR VALUE RECEIVED, THE UNDERSIGNED BENEFICIARY HEREBY IRREVOCABLY TRANSFERS TO:

_____

(NAME OF TRANSFEREE)

_____

(ADDRESS)

ALL RIGHTS OF THE UNDERSIGNED BENEFICIARY TO DRAW UNDER THE ABOVE LETTER OF CREDIT UP TO ITS AVAILABLE AMOUNT AS SHOWN ABOVE AS OF THE DATE OF THIS TRANSFER.

BY THIS TRANSFER, ALL RIGHTS OF THE UNDERSIGNED BENEFICIARY IN SUCH LETTER OF CREDIT ARE TRANSFERRED TO THE TRANSFEREE. TRANSFEREE SHALL HAVE THE SOLE RIGHTS AS BENEFICIARY THEREOF, INCLUDING SOLE RIGHTS RELATING TO ANY AMENDMENTS, WHETHER INCREASES OR EXTENSIONS OR OTHER AMENDMENTS, AND WHETHER NOW EXISTING OR HEREAFTER MADE. ALL AMENDMENTS ARE TO BE ADVISED DIRECTLY TO THE TRANSFEREE WITHOUT NECESSITY OF ANY CONSENT OF OR NOTICE TO THE UNDERSIGNED BENEFICIARY.

THE ORIGINAL OF SUCH LETTER OF CREDIT IS RETURNED HEREWITH, AND WE ASK YOU TO EITHER (1) ENDORSE THE TRANSFER ON THE REVERSE THEREOF, AND FORWARD IT DIRECTLY TO THE TRANSFEREE WITH YOUR CUSTOMARY NOTICE OF TRANSFER, OR (2) ISSUE A REPLACEMENT LETTER OF CREDIT TO THE TRANSFEREE ON SUBSTANTIALLY THE SAME TERMS AND CONDITIONS AS THE TRANSFERRED LETTER OF CREDIT (IN WHICH EVENT THE TRANSFERRED LETTER OF CREDIT SHALL HAVE NO FURTHER EFFECT).

SINCERELY,

SIGNATURE AUTHENTICATED

The name(s), title(s), and signature(s) conform to that/those on file with us for the company and the signature(s) is/are authorized to execute this instrument.

(Name of Bank)

(Address of Bank)

(BENEFICIARY'S NAME)

(SIGNATURE OF BENEFICIARY)

(NAME AND TITLE)

EXHIBIT 8

LANDLORD'S SERVICES

Reasonable security to the Office Building's Common Areas and the parking garage

Trash removal, subject to Section 9.8 of the Lease

Common Area cleaning consistent with first class laboratory buildings in Kendall Square

Landscaping consistent with first class laboratory buildings in Kendall Square

Snow and ice removal consistent with first class laboratory buildings in Kendall Square

Property management services consistent with first class laboratory buildings in Kendall Square

Elevator service consistent with the Matrix

EXHIBIT 9

ALTERATIONS CHECKLIST

Scope letter describing project, design/construction team, and appropriate vendors.
Insurance certificate(s) for Contractors.
Construction Documents (CDs) - Plans and Specifications - stamped by licensed AIA.
Code Review by licensed code engineer incorporated in CDs and/or by stamped letter.

- Code specific - accessibility.
- Code specific - egress paths/exits (numbers, locations, distance).
- Code specific - fire protection, sprinkler distribution, horns/strobes/signage locations.
- Landlord Approved architect, MEPFP engineer, code engineer, structural engineer.

Building permit application.

- Signatures by Architect, Licensed Construction Supervisor.

Cost Affidavit with backup estimate from contractor.
Architect Affidavit.
MEP Affidavit.
FP Affidavit.
Structural Affidavit.
Construction Cost Affidavit.

Low Voltage Wiring Within Premises:

- Insurance certificate(s) for Contractor, if applicable
- If installer is employee, copy of valid government issued electrical license Code Review by licensed code engineer
- permit application as requested by Inspectional Services Department.
- Signature by Licensed Professional (electrician)

Ethernet wiring within Premises:

- Insurance certificate(s) for Contractor, if applicable
- If installer is employee, copy of valid government issued electrical license (to the extent legally required)
- Code Review by licensed code engineer
- permit application as requested by Inspectional Services Department.
- Signature by Licensed Professional (electrician) to the extent legally required

EXHIBIT 9A

ALTERATIONS INSURANCE SCHEDULE

Tenant shall, at its own expense, maintain and keep in force, or cause to be maintained and kept in force by any general contractors, subcontractors or other third party entities where required by contract, throughout any period of Alterations, the following insurance coverages:

(1) Property Insurance. “Special form” or special cause of loss property insurance, and/or Builders Risk coverage for major renovation projects, including, without limitation, coverage for fire, earthquake and flood; boiler and machinery (if applicable); sprinkler damage; vandalism; malicious mischief coverage on all equipment, furniture, fixtures, fittings, tenants work, improvements and betterments, business income, extra expense, merchandise, inventory/stock, contents, and personal property located on or in the Premises. Such insurance shall be in an amount equal to the full replacement cost of the aggregate of the foregoing and shall provide coverage comparable to the coverage in the standard ISO “special form” or special cause of loss property insurance, when such coverage is supplemented with the coverages required above. Property policy shall also include coverage for Plate Glass, where required by written contract.

Builders Risk insurance coverage may be provided by the general contractor on a blanket builders risk policy with limits adequate for the project, and evidencing the additional insureds as required in the Lease.

(2) Liability Insurance. General Liability, Umbrella/Excess Liability, Workers Compensation and Auto Liability coverage as follows:

(a) General Liability	$1,000,000 per occurrence
	$1,000,000 personal & advertising injury
	$3,000,000 products/ completed operations aggregate
	$3,000,000 general aggregate

Tenant’s general contractor is required to maintain, during the construction period and for 3 years after project completion, a General Liability insurance policy, covering bodily injury, personal injury, property damage, completed operations, with limits to include a $1,000,000 limit for blanket contractual liability coverage and adding Landlord as additional insured as respects the project during construction and for completed operations for 3 years after the end of the project. Landlord requires a copy of the ISO 20 10 11 85 Additional Insured endorsement, showing Landlord as an additional insured to the GC’s policy.

(b) Auto Liability	$1,000,000 combined single limit (Any Auto) for bodily injury and property damage, hired and non-owned cover.
(c) Workers Compensation	Statutory Limits
Employers Liability	$1,000,000 each accident
	$1,000,000 each employee
	$1,000,000 policy limit

Tenant’s general contractor shall ensure that any and all sub-contractors shall maintain equal limits of coverage for Workers Compensation/EL and collect insurance certificates verifying same.

(d) Umbrella/Excess Liability	$3,000,000 per occurrence
	$3,000,000 aggregate

To the extent required by Landlord, Contractors’ commercial general liability/umbrella insurance policy(ies) shall include Landlord and Landlord’s designees as additional insureds’, and shall include a primary non-contributory provision. Liability policy shall contain a clause that the insurer may not cancel or materially change coverage without first giving Landlord thirty (30) days’ prior written notice, except cancellation for non-payment of premium, in which event ten (10) days’ prior written notice shall be required.

(3) Deductibles. If any of the above insurance policies have deductibles or self-insured retentions, Tenant and/or contractor (policy Named Insured) shall be responsible for the deductible amount.

All of the insurance policies required in this Exhibit 9A shall be written by insurance companies which are licensed to do business in the Commonwealth of Massachusetts, or obtained through a duly authorized surplus lines insurance agent or otherwise in conformity with the laws of such state, with an A.M. Best rating of at least A and a financial size category of not less than VII. Tenant shall provide Landlord with certificates of insurance upon request, prior to commencement of the Alteration, or within thirty (30) days of coverage inception and subsequent renewals or rewrites/replacements of any cancelled/non-renewed policies.

EXHIBIT 10

TENANT'S HAZARDOUS MATERIALS

Hazardous Material (with Solution Percentage)	Amounts 2021
0.1% Formic Acid in water	8 Liters
0.1% TriFluoroacetic acid in Water	8 Liters
0.5% formamide	6 Liters
10% SDS	2 Liters
100% Ethanol	12 Liters
100% Glycerol	8 Liters
100% Isopropanol	12 Liters
15% Acetonitrile	4 Liters
5% Ethanol	4 Liters
.1M Triethylamine acetate pH 7.0	50 ml
1M Tris pH 7	10 Liters
1M Tris pH 8	10 Liters
1X MES buffer	2 Liters
1X MOPS buffer	2 Liters
1X TAE buffer	20 Liters
20X MES buffer	2 Liters
20X MOPS buffer	2 Liters
20X TAE buffer	20 Liters
2YT powder	5 KG
70% Ethanol	12 Liters
Acetic Acid 5%	4 Liters
Acetone 100%	12 Liters
Acetonitrile 100%	16 Liters
Agar Bacteriological	4 KG
Agarose	500 KG
Assorted polymerases+buffers	100 ML
Assorted restriction enzymes+buffers	100 ML
Beta-mercaptoethanol (100%)	100 ML
Bleach	24 Lters
Carbenicillin	100 GM
Chloramphenicol	100 GM
Chloroform 100%	4 Liters
cobalt agarose beads (50% solution)	1 Liter
Colloidal Coomassie Brilliant Blue G-250 (~.1%)	2 Liters
Dexamethasone	1 Liter
dimethylsulfoxide 100%	2 Liters

DTT	250 gm
Ethanol (100 %)	24 Liters
Ethanol 50%	12 Liters
Ethidium Bromide	0
Glacial acetic acid (100%)	4 Liters
Guanidium Chloride (25%)	2 Liters
Guanidium Thiocyanate 5%	100ml in kits
Hydrochloric acid 37%	4 Liters
Imidazole	4 KG
IPTG	250 gm
Kanamycin	250 gm
LB Liquid Media	48 Liters
LB Miller powder	20 KG
Methanol	12 Liters
NaOH 10M	8 Liters
paraformaldehyde (37%)	2 Liters
Phenol Red	500 ml
phosphoric acid	2 Liters
picogreen kit	250 ml
Propanol 5%	4 Liters
RNAse Zap	2 Liters
roche complete protease inhibitor cocktail	50 g
sodium azide	25 g
Sodium Bicarbonate	2 kg
Sodium Carbonate	2 kg
Sodium Chloride	2 kg
Sodium hydroxide	2 kg
Spectinomycin	250 g
Sulfuric Acid 100%	2 Liters
SyberSafe	250 ml
TCEP	250 g
trifluoroacetic acid	2 Liters
Tween 20	4 Liters
Tween 20 (.5% solution)	10 Liters
Tween 80	2 Liters

EXHIBIT 11

RULES AND REGULATIONS

Tenant and its employees shall not in any way obstruct the sidewalks, halls, stairways, or elevators of the Building, and shall use the same only as a means of passage to and from their respective offices.

Corridor doors, when not in use, shall be kept closed.

Except in connection with the Permitted Use, no animals, except certified service animals, shall be brought into or kept in, on or about the Premises.

The restroom fixtures shall be used only for the purpose for which they were constructed and no rubbish, ashes, or other substances of any kind shall be thrown into them. Tenant will bear the expense of any damage resulting from misuse.

Tenant shall not place any additional lock or locks on any exterior door in the Building or on any door in the Building core within the Premises, including doors providing access to the telephone and electric closets and the slop sink, without Landlord's prior written consent; provided, however, that Tenant shall have control of all keys to doors within the Premises, but will provide Landlord with a master copy of same. At Landlord's option, all keys shall be surrendered to Landlord at the expiration or earlier termination of the Lease.

Landlord reserves the right to exclude or expel from the Building any persons who, in the judgment of Landlord, is intoxicated under the influence of liquor or drugs, or shall do any act in violation of the rules and regulations of the Building.

Landlord reserves the right to close and keep locked all entrance and exit doors of the Building during the hours Landlord may deem advisable for the adequate protection of the property. Use of the Building and the leased Premises before 8 AM or after 6 PM, or any time during Sundays or legal holidays shall be allowed only to persons with a key/card key to the Premises or guests accompanied by such persons. At these times, all occupants and their guests must sign in at the concierge when entering and exiting the Building. Any persons found in the Building after hours without such keys/card keys are subject to the surveillance of building staff.

Tenant shall not, without the prior written consent of Landlord (which consent will not be unreasonably withheld), perform improvements or alterations within the Building or the Premises if the work has the potential of disturbing the fireproofing which has been applied on the surfaces of the structural deck. Landlord and Tenant shall mutually agree on the termite and pest extermination service to control termites and pests in the Premises. Except as included in Landlord's services, tenants shall bear the cost and expense of such extermination services.

Tenant shall not install, operate or maintain in the Premises or in any other area of the Building, any electrical equipment which does not bear the U/L (Underwriters Laboratories) or IEC (International Electrotechnical Conference) seal of approval, or which would overload the

electrical system or any part thereof beyond its capacity for proper, efficient and safe operation as reasonably determined by Landlord, taking into consideration the overall electrical system, the capacities reserved to Tenant in the Lease, and the present and future requirements therefor in the Building. Tenant shall not use more than Tenant's Share of telephone lines available to service the Building, unless Tenant provides its own conduits and service at its sole expense.

Tenant shall not operate or permit to be operated on the Premises any coin or token operated vending machine or similar device (including, without limitation, telephones, lockers, toilets, scales, amusement devices and machines for sale of beverages food, candy, cigarettes or other goods), except for those vending machines or similar devices which are for the sole and exclusive use of tenant's employees.

Bicycles and other vehicles are not permitted inside or on the walkways outside the Building, except in those areas specifically designated by Landlord for such purposes.

Landlord may from time to time adopt appropriate systems and procedures for the security or safety of the Building, its occupants, entry and use, or its contents, provided that Tenant shall have access to the Building 24 hours per day, 7 days a week. Tenant, Tenant's agents, employees, contractors, guests and invitees shall comply with Landlord's reasonable requirements relative thereto.

Canvassing, soliciting, and peddling in or about the Building is prohibited. Tenant shall cooperate and use reasonable efforts to prevent the same.

At no time shall Tenant permit or shall Tenant's agents, employees, contractors, guests, or invitees smoke in any Common Area of the Building.

Tenant shall, at its sole cost and expense: keep any garbage, trash, rubbish and refuse in vermin-proof containers within the interior of the Premises until removed.

Landlord and Tenant shall mutually agree on those areas where lab coats are not allowed.

Lab operators carrying any lab related materials may only travel in the common freight elevator or in stairwells within the Premises. If such freight elevator is down, announcements will be sent from Landlord's property manager designating use of another elevator. At no time should any lab materials travel in passenger elevators.

Any dry ice brought into the Building must be delivered through the common freight elevator only.

All nitrogen tanks must travel in the common freight elevator and should never be left unmanned outside of the Premises.

EXHIBIT 12

FORM OF SNDA

SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AGREEMENT

THIS SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AGREEMENT (this "**Agreement**") is made and entered into as of the day of , 201 by and between a with an address of ("**Subtenant**"), , a with an address of ("**Master Lessor**") and , a with an address of ("**Master Tenant**").

W I T N E S S E T H

REFERENCE is hereby made to that certain lease dated by and between , as landlord (in such capacity, "**Original Landlord**"), and Subtenant, as tenant (the "**Sublease**"), with respect to a portion of the Property consisting of approximately rentable square feet on the floor (the "**Subleased Premises**") of the Building;

REFERENCE is also hereby made to that certain Master Lease Agreement dated on or about the date hereof by and between Master Lessor, as landlord, and Master Tenant, as tenant (as it may be amended from time to time, the "**Master Lease**") with respect to the building commonly known as , Cambridge, Massachusetts (the "**Building**"). A notice of lease with respect to the Master Lease (the "**Notice of Master Lease**") was recorded with the Middlesex South Registry of Deeds in Book , Page .

WHEREAS, pursuant to that certain [Assignment and Assumption Agreement] dated on or about the date hereof, Original Landlord has assigned to Master Tenant, and Master Tenant has assumed, inter alia, all of Original Landlord's right, title and interest as lessor in and to the Sublease, notice of which was included in the notice referred to in the immediately preceding recital;

WHEREAS, Master Tenant and Subtenant have agreed to subordinate the Sublease to the Master Lease; and WHEREAS, subject to the terms and conditions hereinafter set forth, Master Lessor has agreed (a) to recognize the rights of Subtenant under the Sublease, and (b) not to disturb Subtenant's use and enjoyment of the Subleased Premises.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. Incorporation of Recitals; Capitalized Terms. The foregoing recitals are hereby incorporated by reference. All capitalized terms not otherwise defined herein shall have the meanings ascribed to them as set forth in the Master Lease.

2. Subordination. The Sublease is and at all times shall be subject and subordinate to the Master Lease and all amendments and modifications thereof, with the same force and effect as if the Sublease had been executed and delivered subsequent to the execution and delivery of the Master Lease and the recording of the Notice of Master Lease.

3. Subtenant Not To Be Disturbed. So long as Subtenant is not in default (beyond any period given Subtenant by the terms of the Sublease to cure such default) in the payment of rent or additional rent or of any of the terms, covenants or conditions of the Sublease on Subtenant's part to be performed, (a) Subtenant's possession of the Subleased Premises, and its rights and privileges under the Sublease, including but not limited to any extension or renewal rights, if any, shall not be diminished or interfered with by Master Lessor, and (b) Master Lessor will not join Subtenant as a party defendant in any action or proceeding terminating Master Tenant's possession of the Property unless such joinder is necessary to terminate such possession and then only for such purpose and not for the purpose of terminating the Sublease.

4. Tenant to Attorn to Master Lessor. If the Master Lease is terminated pursuant to the terms thereof, or if Master Tenant rejects the Sublease in the course of a bankruptcy proceeding, or if Master Lessor shall succeed to the interest of Master Tenant in and to the Sublease in any other manner, then (a) the Sublease shall continue in full force and effect as a direct lease between Master Lessor and Subtenant (subject to Section 8 below); provided, however, that Master Lessor and its assigns shall not be (i) liable for any misrepresentation, act or omission of Master Tenant, provided, however, that the foregoing shall not release Master Lessor from liability for any default of its obligations under the Sublease continuing after the date on which Master Lessor succeeds to Master Tenant's interest thereunder, including without limitation any maintenance obligations, (ii) subject to any counterclaim, demand or offset which Subtenant may have against Master Tenant; (iii) liable for the return of any security deposit or letter of credit not actually received by Master Lessor and with respect to which Subtenant agrees to look solely to Master Tenant for refund or reimbursement; (iv) unless delivered by Master Tenant to Master Lessor, bound by any advance payment of rent or additional rent or any other sums made by Subtenant to Master Tenant, except for rent or additional rent applicable to the then-current month; (v) obligated to cure any defaults under the Sublease of Master Tenant which occurred prior to the termination of the Master Lease, provided, however, that the foregoing shall not release Master Lessor from liability for any default of its obligations under the Sublease continuing after the date on which Master Lessor succeeds to Master Tenant's interest thereunder, including without limitation any maintenance obligations; or (vi) bound by any covenant to undertake, complete or pay for any improvements to the Subleased Premises; and (b) Subtenant shall attorn to Master Lessor as its landlord, said attornment to be effective and self-operative without the execution of any further instruments. Master Lessor and Subtenant each hereby agrees to execute an instrument in form and substance reasonably acceptable to both parties acknowledging the continuation of the Sublease for the Subleased Premises as a direct lease for the Subleased Premises on the terms and conditions set forth in this Agreement. In addition, Subtenant shall execute and deliver, upon the request of Master Lessor, an instrument or certificate regarding the status of the Sublease consisting of statements, if true (and if not true, specifying in what respect), in the case of the Sublease by Subtenant (A) that the Sublease is in full force and effect, (B) the amounts and date through which rentals have been paid, (C) the commencement date, rent commencement date and duration of the term of the Sublease, (D) that no default, or state of facts, which with the passage of time, or notice, or both, would constitute a default, exists on the part of either party to the Sublease, and (E) the dates on which payments of additional rent, if any, are due under the Sublease.

5. Sublease Amendments. Master Lessor shall not be bound by any amendment to the Sublease made after the date of this Agreement unless Master Lessor shall have consented thereto in writing. Such consent of Master Lessor may be withheld by Master Lessor in its sole and absolute discretion if such amendment (a) reduces the rent payable under the Sublease, (b) provides for any expansion rights, (c) extends the term of the Sublease in addition to Subtenant's current right(s) to extend the term under the Sublease, if any. Any such amendment made after the date of this Agreement without Master Lessor's consent shall not be binding on Master Lessor.

6. Master Lessor's Right to Notice and Cure. Subtenant covenants and agrees to: (a) concurrently give Master Lessor the same default and/or termination notices given to Master Tenant under the Sublease at the following address(es) until otherwise specified in writing by Master Lessor: MIT 650 Main Street LLC, c/o MIT Investment Management Company, One Broadway, Suite 09-200, Cambridge, MA 02142, Attention: Managing Director of Real Estate, with a copy to Goulston & Storrs PC, 400 Atlantic Avenue, Boston, MA 02110, Attention: Colleen P. Hussey, Esq. and a copy by email to RELegal@mitimco.mit.edu; (b) provide Master Lessor with at least ten (10) days plus the number of days (and the same opportunities and rights) as are available to Master Tenant under the Sublease to cure any of Master Tenant's defaults thereunder; and (c) accept Master Lessor's curing of any of Master Tenant's defaults under the Sublease as performance by Master Tenant thereunder.

7. Amendments. This Agreement may not be waived, changed, or discharged orally, but only by agreement in writing and signed by Master Lessor, Master Tenant and Subtenant, and any oral waiver, change, or discharge of this Agreement or any provisions hereof shall be without authority and shall be of no force and effect.

8. Revisions to Sublease. Notwithstanding anything contained in this Agreement or the Sublease to the contrary, in the event that the Master Lease is terminated pursuant to the terms thereof, or if Master Tenant rejects the Sublease in the course of a bankruptcy proceeding, (a) as of the date of such termination or rejection, Master Lessor and Master Lessor's successors and assigns shall have no liability to Subtenant with respect to any representations and warranties on the part of "Landlord" contained in the Sublease (provided that the foregoing shall in no event relieve Master Tenant of any liability to Subtenant with respect to such representations and warranties), and (b) Master Lessor shall have no liability or obligations pursuant to the brokerage provision of the Sublease.

9. Security Deposit. If the Master Lease is terminated pursuant to the terms thereof, or if Master Tenant rejects the Sublease in the course of a bankruptcy proceeding, then Master Tenant shall deliver to Master Lessor the cash security deposit and/or the original letter of credit (including any amendments thereto) and an executed transfer form in the form required by the issue of such letter of credit, if any has been delivered by Subtenant to Master Tenant pursuant to the Sublease. In the event that Master Tenant fails to deliver the same, Subtenant shall, at Subtenant's sole cost and expense, use commercially reasonably efforts (including, without limitation, the payment of any commercially reasonable fees required by the issuer of any such letter of credit and the execution of such reasonable documents as Master Lessor may deem necessary) in order to (a) cause Master Tenant to deliver to Master Lessor any cash security deposit, and (b) cause the original letter of credit issued to Master Tenant to be (i) assigned to Master Lessor or (ii) terminated or canceled. Master Tenant hereby consents to Subtenant's

undertaking the actions described in the immediately preceding sentence and waives any claim Master Tenant may have against Subtenant arising from Subtenant's compliance with the requirements of this Section 9. If such letter of credit is so terminated or canceled, Subtenant shall deliver to Master Lessor a new original letter of credit naming Master Lessor as beneficiary and otherwise meeting the requirements set forth in the Sublease.

10. Relation between Master Lessor and Master Tenant. Notwithstanding anything to the contrary contained herein, if, at the time that Master Lessor succeeds to the interest of Master Tenant as landlord under the Sublease, Master Tenant controls, is controlled by or is under common control with Master Lessor, then, in such event, Master Lessor agrees that no term, covenant or condition of this Agreement shall be interpreted or enforced by Master Lessor in any manner that would have the effect of amending or modifying the Sublease, releasing Master Lessor from any obligation under the Sublease or otherwise reducing the obligations of the landlord thereunder or increasing the obligations of Tenant thereunder (for example, Section 8(a) above and the second sentence of Section 9 shall not be enforced by Master Lessor in such situation).

11. Miscellaneous. This Agreement shall be deemed to have been executed and delivered within the Commonwealth of Massachusetts, and the rights and obligations of the parties hereunder shall be construed and enforced in accordance with, and governed by, the laws of the Commonwealth of Massachusetts without regard to the laws governing conflicts of laws. This Agreement will be executed by each party in recordable form and shall at no expense to Subtenant be recorded by Master Tenant in all places necessary to provide legal notice of this Agreement, Subtenant hereby agreeing to reasonably cooperate with Master Tenant in connection therewith, including without limitation providing such evidence of authority as is required or customary in connection with such recording. If any term of this Agreement or the application thereof to any person or circumstances shall be invalid and unenforceable, the remaining provisions of this Agreement, the application or such term to persons or circumstances other than those as to which it is invalid or unenforceable, shall not be affected. This Agreement is binding upon and shall inure to the benefit of Master Lessor, Master Tenant and Subtenant, and their respective successors and assigns. Each party has cooperated in the drafting and preparation of this Agreement and, therefore, in any construction to be made of this Agreement, the same shall not be construed against either party. In the event of litigation relating to this Agreement, the prevailing party shall be entitled to reimbursement from the other party of its reasonable attorneys' fees and costs. This Agreement constitutes the entire agreement of the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous oral and written agreements and discussions, and may not be amended, waived, discharged or terminated except by a written instrument signed by all the parties hereto. A facsimile, PDF or other electronic signature on this Lease shall be equivalent to, and have the same force and effect as, an original signature. This Agreement may be executed in two or more counterparts which, when taken together, shall constitute one and the same original.

[Signatures on following page]

IN WITNESS WHEREOF, the parties hereto have each caused this Agreement to be executed as of the date first above written.

MASTER LESSOR:

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By: _____
Name:
Title:

MASTER TENANT:

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By: _____
Name:
Title:

SUBTENANT:

< >

By: _____
Name:
Title:

[ADD NOTARY BLOCKS]

License Agreement

This License Agreement, made and entered into as of June 25, 2019 ("**Agreement**"), is by and between Beam Therapeutics Inc., a Delaware corporation having a place of business located at 26 Landsdowne Street, 2nd Floor, Cambridge, MA 02139 ("**Licensee**") and MIL 21E, LLC a Delaware limited liability company having a place of business located at 21 Erie Street, Cambridge, MA 02139 **("Licensor**").

RECITALS

WHEREAS, Licensor, or its affiliate, has leased certain space located at 21 Erie Street, Cambridge, MA 02139 (the **"Building**") through a lease agreement (the "**Lease**") between Licensor and BMR-21 Erie Street, LLC ("**Landlord**"); and

WHEREAS, Licensee desires to use certain space and services, as set forth below, for research and development, laboratory research and office use, and Licensor desires to grant a license to Licensee for such use.

For good and valuable consideration, the receipt and legal sufficiency of which are hereby acknowledged, accepted and agreed to, the parties agree as follows:

1. License.

(a) **License Description**. Licensor grants to Licensee the following (A) and (B), of which shall constitute the Licensee's license (the **"License**"), solely to, (i) use as office, research and development, and laboratory space consistent with current zoning for the Building and all applicable laws; (ii) conduct Licensee's business; and (iii) collaborate with Licensor's staff and other licensees in accordance with this Agreement: (A) a non-transferable, non-assignable license (except as expressly set forth herein) to, (i) use Private Lab H, more specifically identified in the blue-shaded portion of the floor plan attached to this Agreement as Exhibit 1 ("**Lab Suite**"), and (ii) use Private Office G, more specifically identified in the blue-shaded portion of the floor plan attached to this Agreement as Exhibit 1 ("**Office Suite**"), ("**Lab Suite"** and **"Office Suite**", collectively the **"Licensed Premises**") and (B) a non-transferable, non-exclusive, non-assignable license to use any common areas ("**Shared Premises**"), subject to Licensor's reasonable rules and restrictions; provided, however, in the event of a conflict between any such rules and regulations and this Agreement, this Agreement shall control. The parties acknowledge in all events during the Term (as hereinafter defined) of this Agreement, the Shared Premises shall include access to those conference room spaces, kitchen and training rooms that exist in substantially the same or better manner than as of the date of this Agreement. Licensee shall accept the Licensed Premises and Shared Premises in their "as-is" conditions and Licensor shall have no obligation to alter, repair or otherwise prepare the Licensed Premises for Licensee's use or to pay for, or provide any, improvements to the Licensed Premises except as expressly provided herein. Licensee shall not use the Licensed Premises or Shared Premises for any use other than the foregoing, including but not limited to medical care or human clinical trials, without first obtaining written permission from Licensor, which Licensor may withhold in its sole discretion.

(b) **Scope of License**. The License shall not include access to any additional office or laboratory space in the Building. Licensee understands and agrees that other licensee(s) may jointly occupy portions of the Building, not including the Licensed Premises, which shall be exclusive to the Licensee, but including but not limited to the Shared Premises. Licensee agrees to cooperate and coordinate with any other licensee(s) that occupies portions of the Building and that, other than the Licensed Premises, use of any other portion of the Building shall not be exclusive to Licensee. Except as expressly set forth herein, Licensor shall have no liability for the actions of any other licensee(s), persons or entities using or occupying the Building.

(c) **Occupants**. The License shall only grant Licensee, and no more than twenty-seven (27) of Licensee's members, employees or agents (collectively, **"Occupants**"), access to the Licensed Premises and Shared Premises; further provided, that Licensor may grant access to additional Occupants ("**Additional Occupants**") as set forth in Section 3 below.

2. Term and Termination.

(a) **Term**. Unless terminated earlier in accordance with this Section 2, the term ("**Term**") of this Agreement shall commence on October 16, 2019 ("**Term Commencement Date**") and expire on. December 31, 2021 ("**Expiration Date**"). Under no circumstance shall Licensor be liable to Licensee for failure to provide access to any portion of the Licensed Premises or Shared Premises on or before October 16, 2019; provided, however, that if Licensor is unable to provide Licensee access to the Licensed Premises on or before October 16, 2019, with the Lab Suite having been decontaminated, and the Licensed Premises otherwise in suitable condition for occupancy for the purposes set forth in this Agreement, (i) the Term Commencement Date shall not occur until Licensor has delivered access to the Licensed Premises to Licensee, and (ii) the Expiration Date shall not be extended. Licensor agrees to give Licensee fifteen (15) days' prior written notice of the Term Commencement Date. In any event, if Licensor is unable to deliver access to the Licensed Premises to Licensee for occupancy by November 16, 2019, with the work completed as included on Exhibit 4 attached hereto, Licensee shall be entitled to terminate this Agreement by giving written notice thereof to Licensor, and upon the giving of such notice this Agreement shall terminate and all sums theretofore paid by Licensee to Licensor hereunder shall be refunded to Licensee within thirty (30) days of the date of such written notice. In the event any amounts pursuant to the preceding sentence are not refunded to Licensee within such thirty (30) day period, Licensee shall be entitled to a late payment charge equal to two percent (2%) of the amount of such delinquent payment, as well as interest owed at a rate of twelve percent (12%) per annum on any outstanding payment due to Licensee under this Agreement that remains unpaid.

(b) **Term Extension Option**. Licensee, upon six (6) months written notice to Licensor, shall have the right to extend the Term this Agreement by six (6) months ("**Extension Option**"); provided, however, that such written notice of the Extension Option can be given no later than the date that is six (6) full months prior to the Expiration Date. Licensor has no obligation to honor any Extension Option notice that does not strictly comply with the requirements of this Section.

(c) **Termination**. Licensor may terminate this Agreement immediately for "Default" by giving written notice to Licensee specifying the cause. **"Default"** shall be deemed as: (i) Licensee's failure to pay when due any sum of money under this Agreement, and such failure shall continue for a period of five (5) days after written notice from Licensor to Licensee that such payment was not paid when due; (ii) Licensee's failure to comply with any covenants contained herein or Licensee's use of the Licensed Premises or Shared Premises in violation of any rules and procedures promulgated by Licensor or Landlord, and Licensee shall not cure such failure within thirty (30) days after written notice of such failure from Licensor to Licensee; provided, however, that such failure shall not be deemed a Default if such failure could not reasonably be cured during such thirty (30) day period, Licensee has commenced the cure within such thirty (30) day period and thereafter is diligently pursuing such cure to completion, but the total aggregate cure period shall not exceed forty five (45) days; further provided, however, in the event any such failure endangers the health and/or safety of any other Building occupant and/or the Building itself, such failure shall be deemed a Default if Licensee receives notice of the same (which may be oral) and fails to cure within 24 hours, whereas for the avoidance of doubt in such instances Licensor shall have the immediate right to terminate this License following such failure to cure within 24 hours. Upon the occurrence of any of the foregoing, and at any time thereafter, with or without further notice or demand and without limiting Licensor in the exercise of any right or remedy that Licensor may have, Licensor may do any or all of the following by written notice to Licensee or by any lawful means, (A) terminate Licensee's access to the Licensed Premises, or (B) terminate the License. In either instance, Licensee shall immediately surrender the Licensed Premises to Licensor. In such event, Licensor shall have the immediate right to re-enter and remove all persons and property from the Licensed Premises and Shared Premises, and such property may be removed and stored in a public warehouse or elsewhere at the cost and for the account of Licensee, without being deemed guilty of trespass or becoming liable for any loss or damage that may be occasioned thereby. In the event that Licensor shall elect to so terminate this License, then Licensor shall be entitled to recover from Licensee all direct and indirect damages incurred by Licensor by reason of Licensee's default. Upon termination of this Agreement, the License shall expire and Licensee shall immediately vacate the Licensed Premises and Shared Premises. Under no circumstances shall Licensor or Landlord be liable for any alleged, purported, consequential or direct damages resulting from Licensor or Landlord terminating this Agreement. Notwithstanding anything to the contrary contained herein, except as expressly set forth in Section 8 and in the event of damages stemming from hold over after termination of this Agreement, in no other case shall Licensee be liable under this Agreement for any lost profits, damage to business or any form of special, indirect, punitive or consequential damages.

3. License Fee.

(a) **Base Fee.** Licensee shall pay a monthly license fee equal to $125,343.75 ("**License Fee**"), which shall be paid in advance no later than the first day of each and every month during the Term. Licensee shall pay each License Fee payment by electronic payment to Licensor. The License Fee shall be subject to a three percent (3%) increase upon each anniversary of the Term Commencement Date.

(b) **Late Fee.** If any payment of the License Fee, or any other payment due under this Agreement, is not received by Licensor no later than the first day of each month, or when otherwise due, Licensee shall pay to Licensor a late payment charge equal to five percent (5%) of the amount of such delinquent payment, in addition to any outstanding License Fee or any other payment due under this Agreement then owing; provided, however, Licensor hereby agrees to waive one such late fee in any twelve (12) month period so long as Licensee shall pay such outstanding amounts within five (5) days of written notice from Licensor to Licensee of such late payment. Licensee shall pay twelve percent (12%) interest per annum on any outstanding License Fee or other payment due under this Agreement that remains unpaid; such interest shall accrue beginning the date such payment is due until the date such payment is actually paid.

(c) **Additional Fees**. Licensee may request that Licensor grant access to Additional Occupants provided that Licensee first (i) submits a written request to Licensor requesting Additional Occupants; (ii) Licensee receives written confirmation from Licensor granting access to Additional Occupants; and (iii) Licensee pays, in addition to the License Fee, an amount equal to $2,500 per month for each Additional Occupant.·

(d) **Security Deposit**. Licensee shall be required to pay a Security Deposit in the amount set forth below. The purpose of the Security Deposit is to guarantee the full, prompt and faithful performance by Licensee of all of the terms, conditions, covenants, agreements, warranties and provisions of this Agreement to be performed, fulfilled or observed by Licensee hereunder, including but not limited to the payment of the License Fee and other charges. If Licensee breaches any term or condition of this Agreement beyond applicable notice and cure periods, said Security Deposit or any part thereof may be used to pay any such payment or perfo1m any obligations of the Licensee, and the Licensee shall immediately replace the amount of the Security Deposit SP used. Said Security Deposit may be co-mingled with the Licensor's other funds, need not be kept in a separate account, and Licensor shall not be required to pay interest on same. Licensor shall return the balance of the Security Deposit within thirty (30) days following the end of Term, as extended from time to time. Licensor, from time to time, may transfer the Security Deposit to any mortgagee or any grantee or grantees to be held by such mortgagee, grantee or grantees as the Security Deposit hereunder on the above

terms, and upon such transfer to such mortgagee, grantee or grantees, Licensor thereupon shall be relieved from all further liability to the Licensee with respect to the Security Deposit, and Licensee thereafter shall look only to such mortgagee, grantee or grantees for the return of the Security Deposit.

(e) **Initial Payment**. Licensee shall pay, immediately upon executing this Agreement, an amount equal to the License Fee for the first month of the Term of this Agreement ($125,343.75), the License Fee for the last month of the Term of this Agreement ($132,977.18), a Security Deposit equal to $132,977.18, and the Parking Fees (as defined below) associated with Licensee's Parking Spaces (as defined below). As such, Licensee shall pay a total of $391,298.11 plus the aforementioned Parking Fees, as of the execution of this Agreement.

4. **Service Agreement**. Licensor agrees to provide to Licensee, during the entire Term of this Agreement, the services set forth in the Service Agreement attached hereto as **Exhibit 2.** The License Fee shall cover and include the cost of the services set forth in the Service Agreement and, unless the scope of services requested by Licensee exceed those set forth in the Service Agreement, Licensee shall not be assessed any additional fees for services contained in the Service Agreement. The Service Agreement shall be governed by the terms of this Agreement and if there is any conflict between the covenants and representations contained in this Agreement and the Service Agreement, the terms of this Agreement shall prevail and be binding upon Licensor and Licensee. Licensor shall not be liable for any failure to provide the services set forth in the Service Agreement to the extent such failure is beyond Licensor's reasonable control. Notwithstanding the foregoing to the contrary, if, due to any grossly negligent or willful and wrongful act or omission of Licensor, there is an interruption of one or more services or utilities that Licensor is obligated to perform or deliver under this Agreement, Licensor shall use due diligence to cause such restoration of the interruption at the soonest reasonable time.

5. **Common Areas**. Licensee hereby acknowledges that other licensees and/or occupants are occupying or may in the future occupy other portions of the Building. Licensee's use of the Licensed Premises, and access to and use of the common areas and any other services in connection with the Licensed Premises or this Agreement, shall be subject to any and all rules and procedures reasonably promulgated by Licensor and/or Landlord and delivered to Licensee from time to time; provided, however, in the event of a conflict between the terms and conditions of those rules and regulations and this Agreement, this Agreement shall control. Licensee's compliance with such rules and procedures constitutes a material inducement to Licensor's willingness to enter into this Agreement; any violation thereof shall constitute a material breach of this Agreement.

6. **Parking**. During the Term, Licensee shall have a non-exclusive, non-transferable license to use six (6) unreserved parking spaces ("**Licensee's Parking Spaces**"). Licensee shall have no right to elect to reduce its number of Licensee's Parking Spaces and shall be responsible for the Parking Fees (defined below) for such spaces regardless of whether its Occupants use Licensee's Parking Spaces. Licensee shall pay, in addition to the License Fee, monthly parking fees equal to the prevailing rates for the Building ("**Parking Fees**") and shall pay such Parking Fees to Licensor at the time each License Fee payment is due.

7. **Modifications to Licensed Premises.** Licensee shall not make any modification to the Licensed Premises without Licensor's prior written approval, which approval may be withheld or conditioned in Licensor's sole discretion. Licensee shall bear the cost of any approved modifications to the Licensed Premises completed by or on behalf of Licensee. All articles of personal property, and all business and trade fixtures, machinery and equipment, cabinet work, furniture and movable partitions, if any, paid for or installed by Licensee in the Licensed Premises will be and remain the property of Licensee and may be removed by Licensee at any time, provided that Licensee, at its expense, shall repair any damage to the Licensed Premises caused by such removal or by the original installation. Licensee shall remove all of Licensee's personal property at the expiration of the Term of this Agreement or sooner termination of this Agreement, in which event the removal shall be done at Licensee's expense and Licensee, prior to the end of the Term of this Agreement or upon sooner termination of this Agreement, shall repair any damage to the Licensed Premises caused by its removal. Notwithstanding anything to the contrary contained herein, the parties hereby acknowledge that those modifications listed on Exhibit 4 (the "**Initial Work**") are hereby approved by Licensor, and Licensee shall cause the removal of the same at Licensee's expense and Licensee, prior to the end of the Term of this Agreement or upon sooner termination of this Agreement, and shall repair any damage to the Licensed Premises caused by its removal.

8. **Hazardous Materials.** Licensee shall strictly comply with all Environmental Laws to the extent such provisions relate to the Licensed Premises during the Term of this Agreement. For purposes hereof, "**Environmental Laws**" shall mean all laws, statutes, ordinances, rules and regulations of any local, state or federal governmental authority having jurisdiction concerning environmental, health .and safety matters, including but not limited to any discharge by Licensee or Licensee's Occupants into the air, surface water, sewers, soil or groundwater of any Hazardous Material (defined below) whether within or outside the Licensed Premises, including, without limitation (i) the Federal Water Pollution Control Act, 33 U.S.C. Section 1251 et seq., (ii) the Federal Resource Conservation and Recovery Act, 42 U.S.C. Section 6901 et seq., (iii) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. Section 9601 et seq., (iv) the Toxic Substances Control Act of 1976, 15 U.S.C. Section 2601 et seq., and (v) Chapter 21E of the General Laws of Massachusetts. Licensee, at its sole cost and expense, shall comply with (a) Environmental Laws, and (b) any rules; requirements and safety procedures of the Massachusetts Department of Environmental Protection, the city in which the Building is located, and any insurer of the Building or the Licensed Premises with respect to Licensee's use, storage and disposal of any Hazardous Materials . Notwithstanding anything in this Agreement to the contrary, Licensee shall have no liability to Licensor or responsibility under this Agreement for any Hazardous Materials in, on, under or about the Licensed Premises that were not released, discharged, stored or introduced by Licensee or its agents. The term "**Hazardous Material**" means asbestos, oil or any hazardous, radioactive or toxic substance, material, waste or petroleum derivative which is or becomes regulated by any Environmental Law or which is designated as a "hazardous substance," "hazardous material," "oil," "hazardous waste" or toxic substance under any Environmental Law. Licensee shall follow all of Licensor's Environmental Health and Safety ("**EH&S**") guidelines and requirements, which may be modified from time to time.

9. **Fire, Other Casualty; Eminent Domain**. In the event of a fire or other casualty affecting the Building or the Licensed Premises, or of a taking of all or a part of the Building or Licensed Premises under the power of eminent domain: (i) Licensor shall not have any obligation to repair or restore the Licensed Premises or any alterations or personal property; (ii) Licensee shall be entitled only to a proportionate abatement of the License Fee (including any charges for Additional Occupant(s)) and Parking Fees during the time and to the extent the Licensed Premises are unfit for the purposes permitted under this Agreement and not used by Licensee as a result thereof; (iii) Licensee shall not, by reason thereof, have a right to terminate this Agreement unless the Lease shall be terminated; and (iv) Licensor and Landlord reserve the right to terminate this Agreement in connection with any right granted to either Licensor or Landlord under the Lease whether or not the Licensed Premises is damaged or the subject of a taking. In the event Licensor or Landlord exercises the right to terminate the Lease as the result of any such fire, casualty or taking, (a) Licensor shall provide Licensee with a copy of the relevant termination notice and this Agreement shall terminate on the date upon which the Lease terminates and (b) Licensee shall immediately pay to Licensor· all of Licensee's insurance proceeds relating to all alterations (but not to Licensee's personal property). Notwithstanding anything to the contrary contained herein, in the event a casualty or condemnation proceeding occurs during the last six (6) months of the Term resulting in the destruction or taking of all or any portion of the Licensed Premises or access thereto, Licensee and Licensor shall each have the right to terminate this Agreement upon thirty (30) days prior written notice to the other, with such notice to be given within thirty (30) days following the casualty or condemnation event.

10. **Limit of Liability**. Notwithstanding anything to the contrary contained in this Agreement, Landlord, Licensor, their respective, members, officers, directors, employees, agents, servants, lenders, mortgagees, ground lessors beneficiaries and contractors (collectively, the "**Licensor Parties**"), shall not be liable for any damages or injury to person or property or resulting from the loss of use thereof sustained by Licensee or anyone having claims through or on behalf of Licensee, based on, arising out of, or resulting from, any cause whatsoever, including any due to the Building becoming out of repair, or due to the occurrence of any accident or event in or about the Building, or due to any act or neglect of any tenant or occupant of the Building or any other person. Notwithstanding the foregoing provision of this Section, Licensor Parties shall not be released from liability to Licensee for any physical injury to any natural person caused by Licensor Parties' gross negligence or willful misconduct to the extent such injury is not covered by insurance either carried by Licensee (or such person) or required by this Agreement to be carried by Licensee; provided that Licensor Parties shall not, under any circumstances, be liable for any exemplary, punitive, consequential or indirect damages (or for any interruption of or loss to business). No Licensor Parties' shall be held to have any personal liability for satisfaction or any claim or judgment.

11. **Waiver of Claims**. Licensee hereby releases and waives any and all claims against the Licensor Parties for injury or damage to person, property or business of every kind, nature and description, sustained in or about the Building or the Licensed Premises by Licensee or anyone claiming under Licensee, other than by reason of gross negligence or willful misconduct of the Licensor Parties and except in any case which would render this release

and waiver void under applicable law. Except to the extent caused by or arising from the negligence or willful misconduct of Licensee or its agents, employees or contractors, and subject to the waiver of subrogation contained in Section 12(a), Licensor shall protect, indemnify and hold the Licensee harmless from and against all loss, claims, liability or costs (including court costs and attorney's fees) incurred by reason of any negligence or willful misconduct of Licensor or the Licensor Parties.

12. Insurance. See Insurance Requirements attached hereto as **Exhibit 3.**

(a) **Subrogation**. Licensee and its insurers hereby waive any and all rights of recovery or subrogation against the Licensor Parties with respect to any Claims (as defined below) howsoever caused, that are covered, or should have been covered, by valid and co1lectible insurance being carried in accordance with Exhibit 3, including any deductibles or self-insurance maintained thereunder. If necessary, Licensee agrees to endorse the required insurance policies to permit waivers of subrogation as required hereunder and hold harmless and indemnify the Licensor Parties for any loss or expense incurred as a result of a failure to obtain such waivers of subrogation from insurers. Such waivers shall continue so long as Licensee's insurers so permit. Any termination of such a waiver shall be by written notice to Licensor. Licensee, upon obtaining the policies of insurance required or permitted hereunder, shall give notice to its insurance carriers that the foregoing waiver of subrogation is contained in herein. If such policies shall not be obtainable with such waiver or shall be so obtainable only at a premium over that chargeable without such waiver, then Licensee shall notify Licensor of such conditions. Licensor and its insurers hereby waive any and all rights of recovery or subrogation against the Licensee with respect to any Claims (as defined below) howsoever caused, that are covered, or should have been covered, by valid and collectible insurance, including any deductibles or self-insurance maintained thereunder.

(b) **Assumption of Risk**. Licensee assumes the risk of damage, and shall be liable for any damage caused to, any fixtures, goods, inventory, merchandise, equipment and leasehold improvements, and the Licensor Parties shall not be liable for injury to Licensee's business or any loss of income therefrom, relative to such damage. Licensee shall, at Licensee's sole cost and expense, carry such insurance as Licensee desires for Licensee's protection with respect to personal property of Licensee or business interruption.

13. Indemnification. Except to the extent the same is as a result of the gross negligence and willful misconduct of Licensor or any of the Licensor Parties, and subject to the waiver or subrogation contained in Section 12 hereof, Licensee shall indemnify, defend (by counsel acceptable to Licensor), release, protect and hold the Licensor Parties harmless from and against any and all demands, claims, liabilities, losses, costs, expenses, actions, causes of action, damages, suits or judgments, and all reasonable expenses (including reasonable attorneys' fees, charges and disbursements, regardless of whether the applicable demand, claim, action, cause of action or suit is voluntarily withdrawn or dismissed) incurred in investigating or resisting the same (collectively, "**Claims**") of any kind or nature that arise before, during or after the Term, arising out of or related to: (i) the use or occupancy of the

Licensed Premises or Shared Premises by Licensee or its Occupants or anyone claiming by, through or under Licensee; (ii) the failure by Licensee or anyone claiming by, through or under Licensee to comply with any term, condition, or covenant of this Agreement, including, without limitation, Licensee's obligation to surrender the Licensed Premises in the condition herein required; (iii) the negligence or willful misconduct of Licensee, its agents or anyone claiming by, through or under Licensee; (iv) the existence of Hazardous Materials on, under or about the Licensed Premises to the extent caused, stored, released, discharged or introduced by Licensee or its agents; (v) the death of or injury to any person or damage to any property in the Licensed Premises; or (vi) the death of or injury to any person or damage to any property on or about the Building to the extent caused by the negligence, recklessness or willful misconduct of Licensee or its agents.

14. Assignment.

(a) **No Assignment**. Licensee shall not assign, encumber or transfer this Agreement, or any part of it, or its right or interest in it, without Licensor's prior written approval. Licensee shall not in any way obstruct or interfere with the rights of other licensees, occupants or users of the Building, nor shall it permit its employees, representatives, or contractors to do so. Licensor may assign this Agreement.

(b) **Prohibited Transfers**. Notwithstanding any other provision contained in this Agreement to the contrary, Licensee shall not knowingly, after reasonable inquiry, transfer or permit the transfer of any legal or beneficial interest in Licensee to, or assign, sublicense or otherwise transfer all or any portion of its interest under this Agreement or in all or any portion of the Licensed Premises to, or enter into any sublicense or other use or occupancy agreement to, any:

i. Person (or any Person whose operations are directed or controlled by a Person) that has been convicted of or has pleaded guilty in a criminal proceeding to a felony or that is an ongoing target of a grand jury investigation convened pursuant to applicable statutes concerning organized crime;

ii. Person organized in or controlled from a country, the activities with respect to which are regulated or controlled pursuant to the following laws and the regulations or executive orders promulgated thereunder: (A) the Trading with the Enemy Act of 1917, 50 U.S.C. App. §1, *et seq.*, as amended; (B) the International Emergency Economic Powers Act of 1976, *50* U.S.C. §1701, *et seq.*, as amended; or (C) the Anti-Terrorism and Arms Export Amendments Act of 1989, codified at Section 6(j) of the Export Administration Act of 1979, 50 U.S.C. App. §2405W, as amended; or

iii. Person with whom Landlord or Licensor is restricted from doing business wider either (A) Executive Order No. 13224 on Terrorist Financing (effective September 24, 2001 (as amended or supplemented from time to time, the "**Executive Order**"), or (B) the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and

Obstruct Terrorism Act of 2001 (Public Law 10756; as amended, from time to tin1e, the "**Patriot Act**"), or (C) the regulations of the United Stated Department of the Treasury Office of Foreign Assets Control (including, without limitation, those Persons named on the list of "Specially Designated Nationals and Blocked Persons" as modified from time to time), or other governmental action; or

iv. Affiliate of any of the Persons described in the preceding paragraphs (i), (ii) or (iii).

As used herein, "Person" shall mean any individual or entity, and the heirs, executors, administrators, legal representatives, successors and assigns of such Person where the context so admits; "Affiliate" shall mean, with respect to any Person, (i) in the case of any such Person which is an Entity, any partner, shareholder, member or other owner of such Entity, provided that such partner, shareholder, member or other owner owns more than fifty percent (50%) of the Equity Interests of such Entity, and (ii) any other Person which is a Parent, a Subsidiary, or a Subsidiary of a Parent with respect to such Person or with respect to one or more of the Persons referred to in the preceding clause (i); "Equity Interest" shall mean with respect to any Entity, (i) the legal (other than as a nominee) or beneficial ownership of outstanding voting or non-voting stock of such Entity if such Entity is a business corporation, a real estate investment trust or a similar entity, (ii) the legal (other than as a nominee) or beneficial ownership of any partnership, men1bership or other voting or non-voting ownership interest in a partnership, joint venture, limited liability company or similar entity, (iii) a legal (other than as a nominee) or beneficial voting or non-voting interest in a trust if such Entity is a trust and (iv) any other voting or nonvoting interest that is the functional equivalent of any of the foregoing; "Parent" shall mean, with respect to any Subsidiary, any Person which owns directly or indirectly through one or more Subsidiaries the entire Equity Interest in such Subsidiary; and "Subsidiary" shall mean, with respect to any Parent, any Entity in which a Person, owns, directly or indirectly through one or more Subsidiaries, the entire Equity Interest in such Subsidiary. If Licensee is a corporation, limited liability company, partnership or trust, the transfer of outstanding capital stock of Licensee by persons or parties through the "over the counter market" or through any recognized stock exchange, shall not be deemed an assignment or transfer of this Agreement.

Notwithstanding anything to the contrary contained in this Section 14, the provisions of this Section 14 shall not apply to (and Licensor consent shall not be required in connection with,) the following transfers: (1) transfers to an entity into or with which Licensee is merged or consolidated, or (2) transfers to any entity whic4 purchases all or substantially all of Licensee's voting stock, partnership interests or other membership interests, or (3) transfers to an entity to which all or substantially all of Licensee's assets are transferred (the transferee in clauses (1), (2) or (3) being referred to as a "Licensee's Successor"); or (4) transfers (including, without limitation, subleases or other occupancy agreements) to any entity which controls or is controlled by Licensee or is under common control with Licensee (the transferee in clause (4) being referred to as a "Licensee Affiliate"); provided however, Licensee shall provide thirty (30) day advance written notice to Licensor prior to any such transfer and, further provided that in any of such events:

(i) with respect to a Licensee Successor such Licensee Successor has a net worth which, in Licensor's reasonable judgment, is sufficient to meet the financial and other obligations of Licensee under this Agreement;

(ii) proof reasonably satisfactory to Licensor of such net worth shall have been delivered to. Licensor at least ten (10) days prior to the effective date of any such transaction; provided, however, that if, due to securities regulations or other applicable laws or a written confidentiality agreement, Licensee is unable to provide prior notice of such transaction, then Licensee shall provide such notice to Licensor within ten (10) days after the date of such transaction; and

(iii) such merger, acquisition, consolidation or transfer shall be for a valid business purpose and not principally for the purpose of transferring this Agreement.

15. Miscellaneous.

(a) **Investment Right**. [Intentionally Omitted]

(b) **Attorneys' Fees**. In the event of any litigation or arbitration between Licensee and Licensor, whether based on contract, tort or other cause of action or involving bankruptcy or similar proceedings, in any way related to this Agreement, the non-prevailing party shall pay to the prevailing party all reasonable attorneys' fees and costs and expenses of any type, without restriction by statute, court rule or otherwise, incurred by the prevailing party in connection with any action or proceeding (including arbitration proceedings, any appeals and the enforcement of any judgment or award), whether or not the dispute is litigated or prosecuted to final judgment. The "prevailing party" shall be determined based upon an assessment of which party's major arguments or positions taken in the action or proceeding could fairly be said to have prevailed (whether by compromise, settlement, abandonment by other party of its claim or defense, final decision after any appeals, or otherwise) over the other party's major arguments or positions on major disputed issues. Any fees and cost incurred in enforcing a judgment shall be recoverable separately from any other amount included in the judgment and shall survive and not be merged in the judgment.

(c) **Authority**. Each person executing this Agreement on behalf of a party hereto represents and warrants that he or she is authorized and empowered to do so and to thereby bind the party on whose behalf he or she is signing.

(d) **Captions**. All captions and headings in this Agreement are for the purposes of reference and convenience and shall not limit or expand the provisions of this Agreement.

(e) **Counterparts**. This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original and all of which taken together shall comprise but a single instrument.

(f) **Entire Agreement**. This Agreement contains all of the covenants, conditions and agreements between the parties concerning the Licensed Premises, and shall supersede any and all prior correspondence, agreements and understandings concerning the Licensed Premises, both oral and written. No addition or modification of any term or provision of this Agreement shall be effective unless set forth in writing and signed by both Licensor and Licensee.

(g) **Notices**. Any notice required or permitted under this Agreement shall be effective if in writing and delivered to the other party at the following address.

LICENSOR	**LICENSEE**
21 Erie Street	26 Landsdowne Street, 2nd Floor
Cambridge, MA 02139	Cambridge MA 02139
Attn: Amrit Chaudhuri	Attn: CEO

(h) **Governing Law**. This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts. Licensee hereby consents to the personal jurisdiction and venue of any state or federal court located in Suffolk County Massachusetts, and any successor court, and the service or process by any means authorized by such court.

(i) **Exhibits**. All exhibits and any schedules or riders attached to this Agreement are incorporated herein by this reference and made a part hereof, and any reference in the body of the Agreement or in the exhibits, schedules or riders to the Agreement shall mean this Agreement, together with all exhibits, schedules and riders.

(j) **Waiver of Trial by Jury**. LICENSEE HEREBY WANES ANY AND ALL RIGHTS IT MAY HAVE UNDER APPLICABLE LAW TO TRIAL BY JURY WITH RESPECT TO ANY DISPUTE WITH ANY LICENSOR PARTIES ARISING DIRECTLY OR INDIRECTLY IN CONNECTION WITH THIS AGREEMENT OR THE LICENSED PREMISES. NOTHING CONTAINED IN TIDS SECTION SHALL BE CONSTRUED AS AWANER BY LICENSOR OR LANDLORD OF ANY OF ITS RIGHTS TO TR1AL BY JURY IN CONNECTION WITH Tii8 LEA.SE OR THIS AGREEMENT FOR ANY CLAIMS OR CAUSES OF ACTION SO TRIABLE.

(k) **Successors and Assigns**. Subject to the provisions of this Agreement relating to assignment and subletting, this Agreement shall be binding upon, and shall inure to the benefit of the parties' respective representatives, successors and assigns.

(l) **Relationship of Parties**. Nothing in this Agreement shall be deemed to create any joint venture or principal-agent relationship or partnership between any of the parties hereto, and no party is authorized to, and no party shall, act toward third parties or the public in any manner that would indicate any such relationship.

(m) **Access**. Landlord and Licensor reserve the right to enter the Licensed Premises upon reasonable prior written or oral notice to Licensee (except that in case of

emergency no notice shall be necessary) in order to inspect the Licensed Premises and/or the performance by Licensee of the terms of this Agreement or to exercise Licensor's rights or perform Licensor's obligations hereunder.

LICENSEE UNDERSTANDS AND ACKNOWLEDGES THAT RIGHTS UNDER THIS AGREEMENT ONLY CONSTITUTE A LICENSE FOR USE OF THE LICENSED PREMISES AND DO NOT INVOLVE THE GRANT OF ANY INTEREST IN REAL ESTATE. LICENSEE SPECIFICALLY DISCLAIMS ANY RIGHTS TO SUMMARY PROCESS AND, PROVIDED THAT, LICENSOR COMPLIES WITH ALL OBLIGATIONS (INCLUDING WITHOUT INVITATION NOTICE AND CURE REQUIREMENTS) HEREUNDER, EXPLICITLY PERMITS LICENSOR TO USE SELF-HELP REMEDIES PROVIDED THAT SUCH SELF-HELP REMEDIES DO NOT BREACH THE PEACE.

IN WITNESS WHEREOF, Licensor and Licensee have duly executed this Agreement as of the day and year first above written.

LICENSOR:

MIL 21E, LLC,

/s/ Amrit Chaudhuri
By: Amrit Chaudhuri
Title: CEO

LICENSEE:

BEAM THERAPEUTICS INC.,

/s/ John Evans
By: John Evans
Title: CEO

Exhibit 1: Licensed Premises

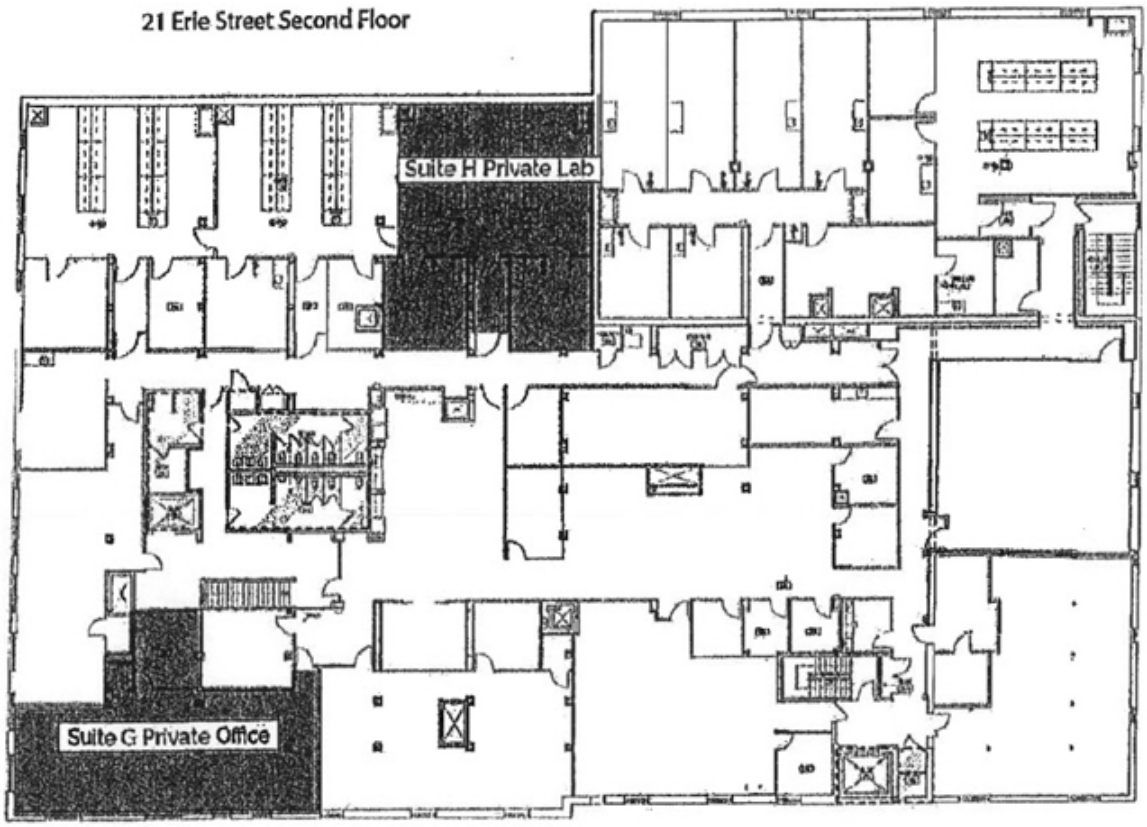

Exhibit 1

Exhibit 2: Service Agreement Scaling Suites

Emergency Procedures: A copy of 21 Brie Street emergency procedures and online access will be provided at the start of occupancy.

Licensee Space	Laboratory Space	Laboratory suites that vary in size from approximately 2,500 — 18,000 sqft and in configurations of either Chemistry, Molecular Biology (BSL-1 and 2), or a mix of the two. Suites may include private offices. Laboratories can be equipped with fume hoods, central gas lines for CO_2 and Nitrogen, and heavy electrical and exhaust infrastructure. Gases and chemicals provided: 1. Vacuum 2. Compressed Air 3. Dry ice 4. Liquid Nitrogen 5. Others by special order and extra pricing Equipment provided may include: 1. Private BSL-1 wet lab bench, sink, eye-wash and safety shower 2. Private BSL-2 cell/tissue culture room 3. Optional Private Chemistry hood with solventstorage 4. Shared access to Share Equipment (see list following) Licensee will need to assign a Laboratory Supervisor and an EHS contact person.
	Offices	Offices are connected or located near the laboratory space. Additional office space may be licensed for additional fee depending on availability. Office furniture is the responsibility of the Licensee. Depending on availability, Licensor may provide Licensee temporary furniture.
	Auxiliary Rooms	Suites may have private auxiliary rooms for sample storage, instruments, equipment etc. Some suites also have a cold room.
	IT	Scaling Suites have a private virtual network with access to redundant gigabyte Internet service and have a private WiFi covering Licensed Premises.
	Security	Each suite has secured key card access and facility entrance points are covered by video surveillance.
	Emergency Power	Emergency generators that support critical equipment and base building life safety equipment are operated by the facility manager together with outside support.
Shared Equipment	Instrumentation	A limited number of shared devices and instrumentation maybe available to Licensee. Users must pass the equipment specific training before use. Equipment may include*: 1. Floor-standing centrifuge 2. Microvolume spectrophotometer 3. Gel imaging system 4. Plate reader

		5. -80C backup .freezer with limited availability 6. Balances 7. Fluorescent microscope (filter cubes for GFP, DAPI, and RFP) 8. Flow cytometer 9. Quantitative PCR machine * List of equipment is subject to change and use may be limited due to availability.
	Glass Wash and Autoclave	A glass wash and autoclave facility will be available to Licensee, provided that such facilities will be run by Licensor and/or a third party (i.e. Licensee shall not run these systems).
	Conference Rooms	Conference rooms will be made available with a central internet-based reservation system. A/V equipment is provided or available for each conference room. Conference call equipment will be available in all conference rooms.
Common Space	Lecture Room	A lecture room (approximately 75-person capacity) is available for seminars and lectures. The lecture room requires an advanced reservation and a nominal fee may be charged for set up and cleaning services. Licensor may offer a range of events, seminars and lectures free of charge for Licensees. Third-party seminars and training may also be provided at a nominal cost.
	Interactive Space	Two café spaces are available to all Licensees. Coffee, tea, water and snacks will be available in each café space.
	Showers	Showers are available to Licensee.
	Wellness Room	A Wellness Room is available upon request.
IT	Support	Tier 1 tech support will be provided by Licensor in collaboration with a third party vendor. Tier 3 tech support will be performed on an ongoing basis for the common IT infrastructure environment.
	Network	Licensee will have access to Licensor’s network. Scaling Suite licensees may install and house its own networking and server equipment. Additional requirements may apply. A detailed description of Network and IT Services is available upon request.
	Wi-Fi	Public Wi-Fi is available throughout the building.
Operational Support	Facility	An on-site facility manager will be available to Licensee. Basic personal protective equipment (PPE) (gloves, safety glasses, etc.) for general use will be available through the facility manger. Specialty PPE has to be provided by the Licensee. Janitorial services will be provided on a schedule and frequency of cleaning that will be based on the needs of the Licensee.
	Permits	The following permits have been obtained by the Licensor for the Licensed Premises*: • Wastewater disposal • Flammable liquids and solvents • Licensor will own the EPA ID number. * Biosafety and/or rDNA permil3 have to be obtained by the Licensee.

Exhibit 2

	During the application process, Licensee will have to submit a Hazard Assessment form that addresses the type and amount of chemicals and biological agents that the Licensee plans to use in the Licensed Premises. No work may be conducted in the Licensed Premises until the form is approved by Licensor. Based on this assessment, the Licensor will create SOP's and EHS training requirements for the Licensee. Additional permits may have to be obtained by the Licensee.
EH&S	A hard copy of all safety and emergency procedures will be delivered to the Licensee and, in addition, will be available on each floor. Recommendations for EHS must be followed by the Licensee. Licensor will conduct a mandatory meeting with the Licensee to communicate and discuss all relevant emergency information and policies. Only Biosafety Level l and 2 work is allowed in Licensed Premises. All Biosafety Level 1 and 2 work must be approved by the Institutional Biosafety Committee (IBC). No select agent work is allowed. Depending on the biosafety work, it may need to be reviewed either by the Cambridge Biosafety Committee (CBC) or an in-house Institutional Biosafety Committee (IBC). Training is provided for all Licensee staff. Initial training will consist of a walk-through of the Licensed Premises and web-based training and certifications. Ongoing training ill web-based and licensor will keep a training record of all training received by Licensee staff. Failure to complete training may result in removal of access or work stoppage.
EH&S Training	The following is a list of training that will be provide if appropriate: • Accident Reporting • Emergency Action Plan • PPE/Job Hazard Analysis • Respiratory Protection • Blood Borne Pathogens • Biosafety • Formaldehyde • Hazard Communication • Chemical Hygiene • Waste Handling • Eye Protection and Safety • Fire Safety Prevention/Fire Extinguishers • First Aid and Emergency Response • Sharps Safety and Needle-Stick Prevention * Additional specialized training may be required.

Exhibit 2

Operational Support (Cont)	EH&S Training Audits	Licensor or a third-party will conduct EHS audits for all procedures and equipment and will implement corrective actions for Licensee at a frequency required by federal, state and local regulations. A review of SOP's will be provided when requested at the Licensee's cost.
	Inspections	Emergency equipment such as safety showers, eyewash stations, fire extinguishers and emergency egress, will be checked by Licensor or a third party on a regular basis as required by EHS provisions. Chemical fume hoods will be inspected and certified on a yearly basis by a third-party vendor.
	Waste Management	A third party vendor will manage all aspects of wastewater management. A wastewater operator will service and maintain the pH neutralization system and check all auxiliary piping, etc. Preventative maintenance of all wastewater systems will be done once per month. Wastewater sampling, sample transport, analysis and reports will be done by a third-party vendor. The chart recorder and other data logs will be checked regularly. Hazardous, non-hazardous and biological waste will be removed from satellite accumulation areas in the Licensed Premises such as laboratories, hoods or storage rooms. To ensure ongoing compliance, improvements of existing systems will be based on third party recommendations. Licensor will maintain a wastewater treatment license.
	Purchasing	Licensor will maintain a central inventory system for chemicals, flammable solvents and toxic biologicals, including MSDS administration and centralized shipping and receiving. Licensee will be responsible for ordering chemicals and biologicals and will bear sole responsibility and cost of any errors and costs associated with shipment; or instances where chemicals or biologicals are not in compliance with the rules and regulations governing the Licensed Premises and must be returned or properly disposed of.
	Emergencies	There will be 24/7 on-call emergency personnel in case of emergencies such as accidents, spills, etc.
Security	Secured Space	Licensor and security professional will be available at the entrance of the building Monday-Friday from 8AM to 5PM. After hours security personnel will be available at a reception area, or another area upon notification from Licensor. Licensee can request that security personnel make tours of Licensed Premises after hours. Biosafety regulations may prevent security personnel from entering Licensed Premises.
	Visitors	All visitors will be directed to a receptionist provided by Licensor where they will have to sign in and receive a badge. Licensee is responsible for meeting visitor at the receptionist desk and escorting the visitor in the Building and Licensed Premises. Due to safety concerns, visitors will not be allowed into Licensed Premises without prior approval by Licensor. Off-hour visitors will need approval by Licensor in advance. Licensee is solely responsible for its visitors' actions, ensuring its visitors adhere to all of Licensor's policies, and for accompanying visitor at all times during their visit duration. See Visitor Policy for more details.

Exhibit 2

Office Support	Receptionist	Licensor will provide a receptionist to greet all Licensee visitors, sign them in, and announce them to Licensee staff. The receptionist is also available for general inquiries from the Licensee and directing these inquiries to the person responsible for addressing the inquiries.
	Print and Copy	Shared access printers and copiers for standard print and copy jobs will be maintained by Licensor for Licensee.
	Mail	Standard receiving, logistics, handling and mail delivery services are provided by the Licensor. Specialized products, instrumentation, especially when heavy, chemicals, biologicals and regulated products that require special handing will require Licensee to obtain approvals and make special arrangements to support the necessary logistics and handling.

The following services are not provided and/or are not included in License. When available, these services can be provided under a separate agreement with different terms.

Scaling Suites

Office Furniture

Renovations past 365 days of commencement date.

IT Support Level 2 and 4

Any research/work required to be conducted under Biosafety Levels (BSL) 3 or 4 policies and guidelines.

Use of any radioactive material.

Radiation producing equipment (including lasers) will need special approval

Shared TC rooms

Specific Training such as RCRA, DOT, cyanide, etc.

Exclusive use of shared and common spaces

Special PPE

International Phone Calls in Conference Rooms (available upon request and with 24 hour prior notice)

Facsimile Services

Shipping of Packages

Costs of moving in and moving out

Certification and Preventative Maintenance of company owned equipment

Use of MIL accounts for purchases

Biosafety and/or rDNA permits

Exhibit 2

Exhibit 3: Insurance Requirements

1. Insurance.

1.1. Licensee shall, at its own cost and expense, procure and maintain during the Term the following insurance for the benefit of Licensee and Landlord (as their interests may appear) with insurers financially acceptable and lawfully authorized to do business in the state where the Licensed Premises are located:

(a) Commercial General Liability insurance on a broad-based occurrence coverage form, with coverages including but not limited to bodily injury (including death), property damage (including loss of use resulting therefrom), premises/operations, personal and advertising injury, and contractual liability with limits of liability of not less than $2,000,000 for bodily injury and property damage per occurrence, $2,000,000 general aggregate, which limits may be met by use of excess and/or umbrella liability insurance provided that such coverage is at least as broad as the primary coverages required herein.

(b) Commercial Automobile Liability insurance covering liability arising from the use or operation of any vehicle, including those owned, hired or otherwise operated or used by or on behalf of Licensee. The coverage shall be on a broad-based occurrence form with combined single limits of not less than $1,000,000 per accident for bodily injury and property damage.

(c) Commercial Property insurance covering property damage to the full replacement cost value and business interruption. Covered property shall include all of Licensee’s improvements in the Licensed Premises and Licensee’s property including personal property, furniture, fixtures, machinery, equipment, stock, inventory and improvements and betterments, which may be owned by Licensee or Licensor and required to be insured hereunder, or which may be leased, rented, borrowed or in the case custody or control of Licensee, or Licensee’s agents, employees or subcontractors. Such insurance shall be written on an “all risk” of physical loss or damage basis including the perils of fire, extended coverage, electrical injury, mechanical breakdown, windstorm, vandalism, malicious mischief, sprinkler leakage, back-up of sewers or drains, flood, earthquake, terrorism and such other risks Licensor may from time to time designate, for the full replacement cost value of the covered items with an agreed amount endorsement with no co-insurance. Business interruption coverage shall have limits sufficient to cover Licensee’s lost profits and necessary continuing expenses, including License Fees due Licensor under the Agreement. The minimum period of indemnity for business interruption coverage shall be twelve (12) months plus twelve (12) months’ extended period of indemnity.

(d) Workers’ Compensation insurance as is required by statute or law, or as may be available on a voluntary basis and Employers’ Liability insurance with limits of note less than the following: each accident, Five Hundred Thousand ($500,000); disease ($500,000); disease (each employee), Five Hundred Thousand Dollars ($500,000).

(e) Medical malpractice insurance at limits of not less than $1,000,000 each claim during such periods, if any, that Licensee engages in the practice of medicine at the Licensed Premises or conducts clinical trials on humans.

(f) Pollution Legal Liability insurance is required if Licensee stores, handles, generates or treats Hazardous Materials, as determined solely by Licensor, on or about the Licensed Premises. Such coverage shall include bodily injury, sickness, disease, death or mental anguish or shock sustained by any person; property damage including physical injury to or destruction of tangible property including the resulting loss of use thereof, clean-up costs, and the loss of use of tangible property that has not been physically injured or destroyed; and defense costs, charges and expenses incurred in the investigation, adjustment or defense of claims for such compensatory damages. Coverage shall apply to both sudden and non-sudden pollution conditions including the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste material or other irritants, contaminants or pollutants into or upon land, the atmosphere or any watercourse or body of water. Claims-made coverage is permitted, provided the policy retroactive date is continuously maintained prior to the commencement date of this agreement, and coverage is continuously maintained during all periods in which Licensee occupies the Licensed Premises. Coverage shall be maintained with limits of not less than $1,000,000 per incident with a $2,000,000 policy aggregate and for a period of two (2) years thereafter.

1.2. The insurance required of Licensee shall be with companies at all times having a current rating of not less than A- and financial category rating of at least Class VII in "A.M. Best's Insurance Guide" current edition. Licensee shall obtain for Licensor from the insurance companies/broker or cause the insurance companies/broker to furnish certificates of insurance evidencing all coverages required herein to Licensor. Licensor reserves the right to require complete, certified copies of all required insurance policies including any endorsements. No such policy shall be cancelable or subject to reduction of coverage or other modification or cancellation except after twenty (20) days' prior written notice to Licensor from Licensee or its insurers (except in the event of non-payment of premium, in which case ten (10) days' written notice shall be given). All such policies shall be written as primary policies, not contributing with and not in excess of the coverage that Licensor may carry. Licensee's required policies shall contain severability of interests clauses stating that, except with respect to limits of insurance, coverage shall apply separately to each insured or additional insured. Licensee shall, at least ten (10) days prior to the expiration of such policies, furnish Licensor with renewal certificates of insurance or binders. Licensee agrees that if Licensee does not take out and maintain such insurance, Licensor may (but shall not be required to) procure such insurance on Licensee's behalf and at its cost to be paid by Licensee as part of its License Fee. Commercial General Liability, Commercial Automobile Liability, Umbrella Liability and Pollution Legal Liability insurance as required above shall name Licensor, Landlord, BioMed Realty, L.P., BioMed Realty, LLC, and BRE Edison L.P., and their respective officers, employees, agents, general partners, members, subsidiaries, affiliates and Lenders ("**Landlord Parties**") as additional insureds as respects liability arising from work or operations performed by or on behalf of Licensee, Licensee's use or occupancy of the Licensed Premises, and ownership, maintenance or use of vehicles by or on behalf of Licensee.

1.3. In each instance where insurance is to name Landlord Parties as additional insureds, Licensee shall, upon Licensor's written request, also designate and furnish certificates evidencing such Landlord Parties as additional insureds to (a) any lender of Licensor or Landlord holding a security interest in the Building, (b) the landlord under any lease where under Landlord is a tenant of the real property upon which the Licensed Premises is located if the interest of Landlord is or shall become that of a tenant under a ground lease rather than that of a fee owner and (c) any management company retained by Licensor or Landlord to manage the Building.

1.4. Licensee assumes the risk of damage to any fixtures, goods, inventory, merchandise, equipment and leasehold improvements, and Licensor and Landlord shall not be liable for injury to Licensee's business or any loss of income therefrom, relative to such damage, all as more particularly set forth within the Agreement. Licensee shall, at Licensee's sole cost and expense, carry such insurance as Licensee desires for Licensee's protection with respect to personal property of Licensee or business interruption.

1.5. Licensee and its insurers hereby waive any and all rights of recovery against the Landlord Parties with respect to any loss, damage, claims, suits or demands, howsoever caused, that are covered, or should have been covered, by valid and collectible workers' compensation, employer's liability, and other liability insurance required to be carried by Licensee pursuant to this **Exhibit 3**, including any deductibles or self-insurance maintained thereunder. If necessary, Licensee agrees to endorse the required workers' compensation, employer's liability and other liability insurance policies to permit waivers of subrogation as required hereunder and hold harmless and indemnify the Landlord Parties for any loss or expense incurred as a result of a failure to obtain such waivers of subrogation from insurers. Such waivers shall continue so long as Licensee's insurers so permit. Any termination of such a waiver shall be by written notice to Licensor, containing a description of the circumstances hereinafter set forth in this **Exhibit 3**. Licensee, upon obtaining the policies of workers' compensation, employer's liability and other liability insurance required or permitted under this **Exhibit 3**, shall give notice to its insurance carriers that the foregoing waiver of subrogation is contained in this **Exhibit 3**. If such policies shall not be obtainable with such waiver or shall be so obtainable only at a premium over that chargeable without such waiver, then Licensee shall notify Licensor of such conditions.

1.6. Licensor may require insurance policy limits required under the Agreement to be raised to conform with requirements of Landlord's or Licensor's lender.

1.7. The provisions of this **Exhibit 3** shall survive the expiration of earlier termination of the Agreement.

Exhibit 4: Initial Work

SmartLabs

21 Erie St. Level 2

Suite H Lab Renovations

Changes Required to Customize Space:

1. Remove 1 wall with door (shown in blue).

2. Remove and cap 1 safety shower and 1 sink (shown in blue).

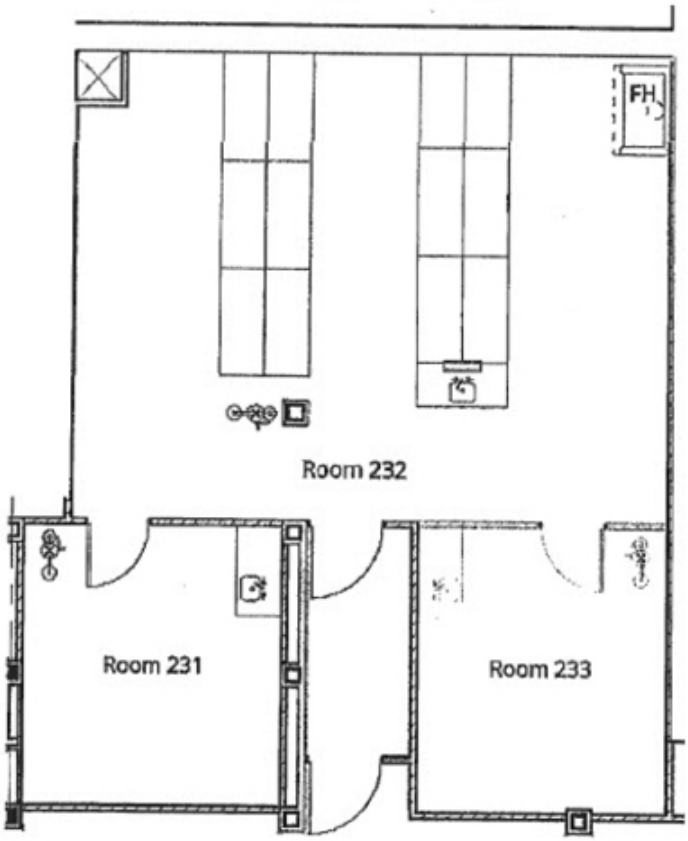

Exhibit 4

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [**], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO BEAM THERAPEUTICS INC. IF PUBLICLY DISCLOSED.

LICENSE AGREEMENT

This License Agreement (this "**Agreement**") is entered into as of this 27th day of June, 2017 (the "**Effective Date**"), by and between Beam Therapeutics, Inc., a corporation existing under the laws of the State of Delaware, having a place of business at c/o F-Prime Capital, 1 Main Street 13th Floor Cambridge, MA 02142 ("**Licensee**"), and **President and Fellows of Harvard College**, an educational and charitable corporation existing under the laws and the constitution of the Commonwealth of Massachusetts, having a place of business at Richard A. and Susan F. Smith Campus Center, Suite 727,1350 Massachusetts Avenue, Cambridge, Massachusetts 02138 ("**Harvard**").

WHEREAS, the technology claimed in the Patent Rights (as defined below) was developed by researchers at Harvard, including researcher Dr. David R. Liu;

WHEREAS, one or more of such researchers is an employee of the Howard Hughes Medical Institute ("HHMI") and HHMI has assigned to Harvard its rights in those Patent Rights on which an HHMI employee is an inventor, subject to certain rights retained by HHMI as specifically described below;

WHEREAS, the research was sponsored in part by the Federal Government of the United States of America and as a consequence this license is subject to overriding obligations to the Federal Government under 35 U.S.C. §§ 200-212 and applicable regulations;

WHEREAS, Licensee wishes to obtain a license under the Patent Rights;

WHEREAS, Harvard desires to have products based on the inventions described in the Patent Rights developed and commercialized to benefit the public;

WHEREAS, such products may be applicable to the improvement of the health of individuals throughout the world; and

WHEREAS, Licensee has represented to Harvard, in order to induce Harvard to enter into this Agreement, that Licensee shall commit itself to commercially reasonable efforts to develop, obtain regulatory approval for and commercialize such products, and thereafter make them available to the public.

NOW, THEREFORE, the parties hereto, intending to be legally bound, hereby agree as follows:

1. Definitions.

As used in this Agreement, the terms with initial letters capitalized, whether used in the singular or plural form, shall have the meanings set forth in this Article 1 or, if not listed below, the meaning designated in places throughout this Agreement.

1.1 **“Abandoned Patent Rights”** has the meaning set forth in Section 6.3.

1.2 **“Achieved Milestone”** has the meaning set forth in Section 4.3.5.

1.3 **“Acquirer”** has the meaning set forth in Section 4.7.

1.4 **“Actual Series B Valuation Multiple”** means the number, not to exceed [**], determined by dividing the Series B Pre-Money by the Series A Post-Money.

1.5 **“Additional Securities”** means shares of capital stock, convertible securities or warrants, options, or other rights to subscribe for, purchase or acquire from Licensee any capital stock of Licensee; provided that, “other rights to subscribe for, purchase or acquire” shall not include (i) preemptive or other rights to participate in new offerings of securities by Licensee after the Effective Date, (ii) obligations under a purchase agreement for preferred stock of Licensee to acquire additional shares of such preferred stock on the same terms as those purchased at an initial closing upon the passage of time or meeting (or waiver) of specified Licensee performance conditions or (iii) anti-dilution provisions that have not been triggered.

1.6 **“Affiliate”** means, with respect to a person, organization or entity, any person, organization or entity controlling, controlled by or under common control with, such person, organization or entity. For purposes of this definition only, “control” of another person, organization or entity will mean the possession, directly or indirectly, of the power to direct or cause the direction of the activities, management or policies of such person, organization or entity, whether through the ownership of voting securities, by contract or otherwise. Without limiting the foregoing, control will be presumed to exist when a person, organization or entity (a) owns or directly controls fifty percent (50%) or more of the outstanding voting stock or other ownership interest of the other organization or entity or (b) possesses, directly or indirectly, the power to elect or appoint fifty percent (50%) or more of the members of the governing body of the other organization or entity. The parties acknowledge that in the case of certain entities organized under the laws of certain countries outside of the United States, the maximum percentage ownership permitted by law for a foreign investor may be less than fifty percent (50%), and that in such cases such lower percentage will be substituted in the preceding sentence.

Notwithstanding the foregoing definition, until the earlier of the consummation of a Change of Control of Licensee or [**] after the closing of the initial public offering of securities of Licensee, (a) the Licensee’s investors shall not be considered to be Affiliates of the Licensee for purposes of this Agreement, including for purposes of Section 4.5, and (b) portfolio companies owned in whole or in part by the Licensee’s investors or any of them that have no legal connection to nor contract with the Licensee shall not be considered to be Affiliates of the Licensee for purposes of this Agreement, including for purposes of Section 4.5. A portfolio company owned in whole or in part by the Licensee’s investors or any of them that is not an Affiliate of the Licensee under the foregoing sentence and enters into a Sublicense agreement with Licensee shall not become an Affiliate of Licensee solely as a result of entering into such Sublicense agreement. A portfolio company that was not an Affiliate under the foregoing in this

paragraph prior to [**] after the closing of the initial public offering of securities of Licensee shall not become deemed an Affiliate of Licensee merely by the passage of time (i.e., they shall retain after such time-point their previous non-Affiliate-of-Licensee status for purposes of this Agreement, unless and until a new control relationship is formed (after such point in time) between Licensee and the applicable portfolio company).

1.7 **"Agreement"** shall have the meaning set forth in the preamble.

1.8 **"Anti-Dilution Shares"** shall have the meaning set forth in Section 4.1.2.

1.9 **"Base Editor"** means [**].

1.10 **"Base Editor Product"** means [**].

1.11 **"Base Editor Patent Rights"** means any patent application identified under the heading "Base Editor Patent Rights" in Exhibit 1.70 ("**Listed Base Editor Application**"), and all other patent applications and patents that fall within the Patent Rights definition of this Agreement based upon the presence of any Listed Base Editor Application in Exhibit 1.70. The Base Editor Patent Rights are further subcategorized as "C-to-T Base Editor Patent Rights," "A-to-G Base Editor Patent Rights" and "C-to-G Base Editor Patent Rights" (each a "**Subcategory of Base Editor Patent Rights**").

1.12 **"Bona Fide Proposal"** means a bona fide proposal by [**] for the research, development and commercialization of a [**] Proposed Product. A Bona Fide Proposal shall include, at a minimum, [**].

1.13 **"Calendar Quarter"** means each of the periods of three (3) consecutive calendar months ending on March 31, June 30, September 30 and December 31 during the Term.

1.14 **"Calendar Year"** means any twelve (12) month period commencing on January 1.

1.15 **"Cap Table"** shall have the meaning set forth in Section 4.1.4.1.

1.16 **"Challenging Party"** has the meaning set forth in Section 4.5.

1.17 **"Change of Control"** means, with respect to Licensee, (a) a merger or consolidation of Licensee with a third party which results in the voting securities of Licensee outstanding immediately prior thereto ceasing to represent at least fifty percent (50%) of the combined voting power of the surviving entity immediately after such merger or consolidation, (b) a transaction or series of related transactions in which a third party, together with its Affiliates, becomes the owner of more than fifty percent (50%) of the combined voting power of Licensee's outstanding securities other than through issuances by Licensee of securities of Licensee in a bona fide financing transaction or series of related bona fide financing transactions, or (c) the sale, lease or other transfer to a third party of all or substantially all of Licensee's assets or business to which this Agreement relates.

1.18 **"Clinical Study"** means a Phase 1 Clinical Study, Phase 2 Clinical Study, Phase 3 Clinical Study, or such other study in humans that is conducted in accordance with good clinical practices and is designed to generate data in support or maintenance of an NDA or other similar application for Regulatory Approval (appropriate to the type of product candidate or product).

1.19 **"Competitor"** means any entity (a) listed in Exhibit 1.19 or (b) that is an Affiliate of an entity described under the foregoing clause (a). Licensee shall have the right to make good faith updates to the Competitors listed in Exhibit 1.19, by written notice to Harvard from time to time, to account for changes since the Effective Date in the entities that, upon the advice of patent counsel to Licensee, Licensee reasonably believes hold or claim to hold a blocking patent position on any Base Editor or any form of Base Editing (other than such position based on a [**] or indication).

For purposes of determining the meaning of the term "Affiliate" in the foregoing clause (b) of this definition with respect to a competitor entity, the second paragraph of Affiliate set forth in Section 1.6 shall be replaced with the following: "Notwithstanding the foregoing definition, (a) a competitor entity's investors shall not be considered to be Affiliates of such competitor entity and (b) portfolio companies owned in whole or in part by such competitor entity's investors that have no legal connection to nor contract with such competitor entity shall not be considered Affiliates of such competitor entity for purposes of this Agreement, including for purposes of this Section 1.19. A portfolio company owned in whole or in part by such competitor entity's investors that is not an Affiliate of such competitor entity under the foregoing sentence and enters into a licensing agreement with such competitor entity shall not become an Affiliate of such competitor entity solely as a result of entering into such licensing agreement.

1.20 **"Confidential Information"** shall have the meaning set forth in Section 11.1.1.3.

1.21 **"Covered"** means, with respect to a given product, process, method or service, that a Valid Claim would (absent a license thereunder or ownership thereof) be infringed by the making, using, selling, offering for sale, importation or other exploitation of such product, process, method or service. With respect to a claim of a pending patent application, "infringed" refers to activity that would infringe or be covered by such Valid Claim if it were contained in an issued patent. Cognates of the word "Covered" shall have correlative meanings.

1.22 **"Developed Country"** means any country other than a Developing Country on the Effective Date and any countries that cease to be Developing Countries after the Effective Date from and after the date that they cease to be Developing Countries in accordance with the definition below.

1.23 **"Developing Country"** means any low-income or lower-middle-income country, as defined by the World Bank, other than those countries listed in Exhibit 1.23.

1.24 **"Development Milestones"** means the development and regulatory milestones set forth in Exhibit 3.1.1 hereto.

1.25 **"Development Plan"** means the plan for the development and commercialization of Licensed Products attached hereto as Exhibit 3.2 as such plan may be adjusted from time to time pursuant to Section 3.2.

1.26 [**]

1.27 **"Dispute"** shall have the meaning set forth in Section 11.7.

1.28 **"Effective Date"** shall have the meaning set forth in the preamble.

1.29 **"Enabled Product"** means any product that (a) is made, identified, discovered, developed, optimized, characterized, selected, derived from or determined to have utility, in whole or in part, by the use or modification of any Patent Rights or any technology or invention described therein or Covered thereby and is (b) is not a Licensed Product.

1.30 **"EU"** means the European Union.

1.31 **"EU Major Market Countries"** means the United Kingdom, Germany, Italy, France and Spain.

1.32 **"Exempted Issuances"** means: shares of common stock issued or issuable, and options, warrants or other rights to purchase Common Stock sold, issued or issuable, by Licensee (i) to a corporation, partnership or other entity (other than a corporation, partnership or other entity that is an Affiliate (which definition for purposes of this Section 1.32 shall be deemed to exclude the second paragraph of Section 1.6)) of Licensee or to the shareholders of such corporation, partnership or other entity pursuant to the acquisition of such corporation, partnership or other entity by Licensee by merger, purchase of substantially all of the assets or similar transaction (but excluding any shares, options, warrants or other rights issued or issuable as incentive compensation); and (ii) to an academic institution, inventor, biopharmaceutical company, or intellectual property holding company (in each case, other than a corporation, partnership or other entity that is an Affiliate (which definition for purposes of this Section 1.32 shall be deemed to exclude the second paragraph of Section 1.6)) of Licensee in consideration of such person's entering into a sponsored research, collaboration, technology or intellectual property license, development, OEM, marketing or other similar agreement with Licensee, including any such agreement entered into in settlement of litigation (but excluding any shares, options, warrants or other rights issued or issuable as incentive compensation); provided, however, that shares issued or issuable to an investor in Licensee in connection with any transaction contemplated under clause (i) or (ii) (other than shares issued to such investor as a shareholder of an entity as contemplated under clause (i)) shall not be Exempted Issuances.

1.33 **"Executive Officers"** shall have the meaning set forth in Section 11.7.

1.34 **"Explanation"** shall have the meaning set forth in Section 3.4.

1.35 **"FDA"** means the United States Food and Drug Administration.

1.36 **"Field"** means the prevention or treatment of any and all human disease(s) and condition(s), [**]. The Field excludes the field of agriculture (including improving the nutritional contents of food crops and/or food animals for use as food, where the ultimate product is regulated as a food rather than a drug, biologic, or other form of therapeutic). To avoid doubt, the Field also excludes research, development, commercialization or other use or exploitation of products for non-human animal or plant applications.

1.37 **"Financing Threshold"** means an aggregate total investment of [**] U.S. Dollars ($[**]) in cash since the date of incorporation or formation of Licensee, in one or a series of related or unrelated transactions, in each case, in exchange for Licensee's capital stock.

1.38 **"First Commercial Sale"** means the date of the first sale by Licensee, its Affiliate or a Sublicensee of a Licensed Product to a third party for end use or consumption of such Licensed Product following receipt of any required Regulatory Approval in the country in which such Licensed Product is sold, excluding, however, any sale or other distribution for use in a clinical study.

1.39 **"FSFD"** means, with respect to a clinical study, the first dose of the first subject dosed in such clinical study.

1.40 **"Fully-Diluted Basis"** means, as of a specified date, the number of shares of common stock of Licensee then-outstanding plus the number of shares of common stock of Licensee issuable upon exercise or conversion of then-outstanding convertible securities or warrants, options, or other rights to subscribe for, purchase or acquire from Licensee any capital stock of Licensee (which shall be determined without regard to whether such securities or rights are then vested, exercisable or convertible) plus, without duplication, the number of shares reserved and available for future grant under any then-existing equity incentive plan of Licensee; provided that, for clarity, "other rights to subscribe for, purchase or acquire" shall not include (i) preemptive or other rights to participate in new offerings of securities by Licensee, (ii) obligations under a purchase agreement for preferred stock of Licensee to acquire additional shares of such preferred stock on the same terms as those purchased at an initial closing upon the passage of time or meeting (or waiver) of specified Licensee performance conditions or (iii) anti-dilution provisions that have not been triggered.

1.41 [**]

1.42 **"Generic/Biosimilar Product"** means, with respect to a Licensed Product in a particular country, any pharmaceutical, biopharmaceutical (including gene therapies and cell therapies), or biologic product that: (a) (i) contains the same active pharmaceutical ingredient(s) as such Licensed Product, and is approved by the Regulatory Authority in such country with the same or substantially the same labeling as such Licensed Product for at least one indication in the Field or (ii) is approved by the Regulatory Authority in such country or jurisdiction as a substitutable generic or substitutable biosimilar for such Licensed Product for an indication in the Field or otherwise is approved in a manner that relied on or incorporated data submitted by Licensee, its Affiliates or Sublicensees, in connection with the regulatory filings for such

Licensed Product, including through an ANDA or 505(b)(2) NDA, or any enabling legislation thereof, or any similar procedure provided for biosimilars or that may be applicable to gene therapy products in each case now or in the future; and (b) is sold in such country or jurisdiction by a third party that is not a Sublicensee or an Affiliate of Licensee, or a distributor of any of them. Any product or component thereof (including any Licensed Product or component thereof) licensed, marketed, sold, manufactured or produced by Licensee or its Affiliates or Sublicensees, or any distributor of any of them, will *not* constitute a Generic/Biosimilar Product (but the identical product marketed by another third party is a Generic/Biosimilar Product if it falls within the definition thereof as set forth herein).

1.43 **"Harvard"** shall have the meaning set forth in the preamble.

1.44 **"Harvard Confidential Information"** shall have the meaning set forth in Section 11.1.1.1.

1.45 **"Harvard Names"** shall have the meaning set forth in Section 11.4.

1.46 **"HHMI"** shall have the meaning set forth in the preamble.

1.47 **"HHMI Indemnitees"** shall have the meaning set forth in Section 9.1.3.

1.48 **"HHMI Names"** shall have the meaning set forth in Section 11.4.

1.49 **"IND"** means an FDA Investigational New Drug application, or equivalent application or submission for approval to conduct human clinical investigations filed with or submitted to a Regulatory Authority in conformance with the requirements of such Regulatory Authority.

1.50 **"Initial Public Offering"** means a firm-commitment underwritten public offering of equity securities by Licensee (or an Acquirer) or its (or their) Affiliate pursuant to an effective registration statement under the Securities Act of 1933, as amended.

1.51 **"Initiation of GLP Toxicology"** means the first dose in a non-human animal of a Licensed Product in toxicology testing conducted in accordance with Good Laboratory Practices under the guidelines of 21 U.S. CFR.§ 58.1 et seq. (or its successor regulation) with the intention of using the results of toxicology testing in support of the filing of an IND for which other IND-enabling activities have been completed or are underway at the time of determination of "achievement of Initiation of GLP Toxicology."

1.52 **"Indemnitees"** shall have the meaning set forth in Section 9.1.1.

1.53 **"Law"** shall have the meaning set forth in Section 11.1.3.3.

1.54 **"Licensed Product"** means on a country-by-country basis, (a) any product candidate or product the making, using, selling, offering for sale, importing or exporting of which in the country in question would (without the license granted hereunder) infringe directly, indirectly by inducement of infringement, or indirectly by contributory infringement, at least one pending Valid Claim of the Base Editor Patent Rights (were it to have issued) or issued Valid Claim of the Base Editor Patent Rights in that country, or (b) any Base Editor Product the making, using, selling, offering for sale, importing or exporting of which in the country in question would (without the license granted hereunder) infringe directly, indirectly by inducement of infringement, or indirectly by contributory infringement, at least one pending Valid Claim of the Supporting Technology Patent Rights (were it to have issued) or issued Valid Claim of the Supporting Technology Patent Rights in that country.

1.55 **"Licensee"** shall have the meaning set forth in the preamble.

1.56 **"Licensee Confidential Information"** shall have the meaning set forth in Section 11.1.1.2.

1.57 **"Licensee Patents"** shall have the meaning set forth in Section 1.69.

1.58 **"Loss of Market Exclusivity"** means, on a Licensed Product-by-Licensed Product, country-by-country, and Calendar Year-by-Calendar Year basis, the following has occurred:

(a) the Net Sales of such Licensed Product in such country in such Calendar Year are less than [**] percent ([**]%) of the peak [**] Net Sales of such Licensed Product in such country in any preceding [**];

(b) the decline in such Net Sales is attributable in material part to the marketing or sale in such country of a Generic/Biosimilar Product with respect to such Licensed Product by a third party that is not a Sublicensee or a distributor of any of Licensee or its Affiliates or Sublicensees for the applicable Licensed Product;

(c) Such Generic/Biosimilar Product is being marketed and sold by such third party in the Calendar Year for which a determination of Loss of Market Exclusivity is being made; and

(d) Licensee has used (or has commenced using or is in the course of using) reasonable commercial efforts to exclude such Generic/Biosimilar Product from marketing or sale by such third party in such country.

1.59 **"Maintenance Fees"** has the meaning set forth in Section 4.2.

1.60 **"[**] License"** has the meaning set forth in Section 2.5.10.

1.61 **"Milestone Event"** means any milestone event indicated in Section 4.3.1 or 4.3.2.

1.62 **"NDA"** means a New Drug Application filed with the FDA or an equivalent application to any Regulatory Authority (including a Biologies License Application, or BLA, or its foreign equivalent) requesting Regulatory Approval for a new product.

1.63 **"Net Sales"** means the gross amount billed or invoiced by or on behalf of Licensee, its Affiliates, and Sublicensees (in each case, the "**Invoicing Entity**") on sales, leases or other transfers of Licensed Products, less the following to the extent applicable with respect to such sales, leases or other transfers and not previously deducted from the gross invoice price: (a) customary trade, quantity or cash discounts to the extent actually allowed and taken (including discounts in the form of inventory management fees and chargebacks); (b) amounts actually repaid or credited by reason of rejection or return of any previously sold, leased or otherwise transferred Licensed Products; (c) customer freight and/or insurance charges that are paid by or on behalf of the Invoicing Entity; (d) to the extent separately stated on purchase orders, invoices or other documents of sale, any sales, value added or similar taxes, custom duties or other similar governmental charges levied directly on the production, sale, transportation, delivery or use of a Licensed Product that are paid by or on behalf of the Invoicing Entity, but not including any tax levied with respect to income; (e) rebates granted or given; and (f) a reasonable allowance for uncollectible accounts; provided that:

1.63.1 in any transfers of Licensed Products between an Invoicing Entity and an Affiliate of such Invoicing Entity not for the purpose of resale by such Affiliate and not for use in a clinical trial or compassionate use or as free marketing samples, Net Sales will be equal to the fair market value of the Licensed Products so transferred, assuming an arm's length transaction made in the ordinary course of business, and

1.63.2 in the event that an Invoicing Entity receives non-cash consideration for any Licensed Products or in the case of transactions not at arm's length with a non-Affiliate of an Invoicing Entity, Net Sales will be calculated based on the fair market value of such consideration or transaction, assuming an arm's length transaction made in the ordinary course of business, not to exceed the list price of the Licensed Products in any event.

Transfers of Licensed Products by an Invoicing Entity to its Affiliate or a Sublicensee for resale by such Affiliate or Sublicensee or use in clinical trials, for compassionate use, or use as free marketing samples, will not be deemed Net Sales. Instead, if applicable, Net Sales will be determined based on the gross amount billed or invoiced by such Affiliate or Sublicensee upon resale of such Licensed Products to a third party purchaser. Transfers of Licensed Products by an Invoicing Entity for use in clinical trials, for compassionate use, or use as free marketing samples will not be deemed Net Sales unless such Invoicing Entity bills or invoices for such Licensed Products, in which case, Net Sales will be determined based on the gross amount billed or invoiced by such Invoicing Entity upon transfer for such use.

Notwithstanding the foregoing definition, to the extent of Net Sales arising under a Sublicense, provided that the net Sales royalty to Licensee under such Sublicense after subtracting the Net Sales royalty to Harvard is at least as great as the royalty to Harvard provided for hereunder, the definition that shall be used to calculate Net Sales for purposes of this Agreement shall be such reasonable and customary Net Sales definition as is set forth in the Sublicense agreement, rather than the definition set forth above.

1.64 **"Non-Human/Recombinant Materials"** means any non-human animal, chimera, non-human animal cell, cell from a chimera, non-human organ, organ from a chimera, non-human cell, portion of any of the foregoing, plant, plant cell, or portion of or material derived from any of the foregoing, including any item in the foregoing list that may also contain human genetic material or genetic material of human origin or be otherwise genetically engineered.

1.65 **"Non-Royalty Sublicense Income"** means all consideration received by Licensee or its Affiliates for a Sublicense such as license or distribution fees, milestone or option payments, or license maintenance fees, including any consideration received by Licensee under a Sublicense, but excluding reimbursement of future research and development by or for the Licensee at Licensee's fully burdened cost, reimbursement for patent expenses (including prosecution and enforcement expenses) paid to third parties at out-of-pocket cost to Licensee, reimbursement of commercialization expenses of Licensee under a co-promotion arrangement at Licensee's cost (determined in accordance with U.S. generally accepted accounting principles consistently applied), reimbursement of license, option, or other fees paid to third parties at out-of-pocket cost to Licensee, proceeds from equity investments to the extent at fair market value, principal amount of loans to the extent not forgiven, and royalties on Net Sales of Licensed Products. To avoid doubt as to the calculation of Non-Royalty Sub license Income, "equity investments to the extent at fair market value" means that only a premium over the fair market value of the security received for the equity investment (such fair market value being determined by reference to the price paid by a non-Sublicensee Third Party for the equivalent Licensee security (equal to such price wherever available) or by a reasonable methodology where such non-Sublicensee Third Party price is not available) would be included in Non-Royalty Sublicense Income, and if a loan is partially forgiven, then only the forgiven portion of the loan would be included in the Non-Royalty Sublicense Income. In the event that non-cash consideration is received as Sublicense Income, Sublicense Income shall be calculated based on the fair market value of such non-cash consideration, or, at Licensee's election, Licensee may distribute Harvard's share to Harvard in kind; provided that Licensee may only elect to make such a distribution if such non-cash consideration is a freely transferable security (except for such restrictions on transfer imposed by law). For clarity, a license of intellectual property rights that are necessary for Licensee to make, have made use, have used, sell, offer for sale, have sold, export and import Licensed Products, and other routine contractual covenants that do not involve the payment of any monetary consideration and are customary in the type of deal that the Sublicense is included in (including covenants providing for the research, development, supply, and commercialization responsibilities of the Sublicensee, confidentiality provisions, licenses or other rights or forbearances with respect to improvements and other technologies and intellectual property, retention of co-promotion rights or options to obtain co-promotion rights to the Licensed Product(s) covered by such Sublicense, and indemnification) shall not be deemed non-cash consideration. For purposes of this Section, "all consideration received by Licensee or its Affiliates for a Sublicense" shall include all consideration received by Licensee or its Affiliates for any option, license, sublicense, standstill, covenant not to sue or other right granted under any

other rights owned or controlled (for example, by virtue of a license granted by a third party) by Licensee or its Affiliate, or other agreement or arrangement entered into by Licensee or its Affiliate, in connection with a Sublicense. All rights relevant to making, using, selling, offering to sell or importing particular Licensed Products or Enabled Products to which a Sublicense relates shall be included in or deemed to be granted in connection with the Sublicense under which the rights granted to Licensee hereunder are sublicensed with respect to such Licensed Products or Enabled Products. If Licensee has an opportunity to enter into a profit sharing deal involving a Sublicense, and requests discussions with Harvard, then Harvard shall discuss and negotiate in good faith with Licensee for an appropriate exclusion from Non-Royalty Sublicense Income for payments made as a share of profits (as opposed to milestones or other similar payments) and/or opportunity for Harvard to participate in a portion of the profit share (*e.g.*, the opportunity for Harvard to fund a percentage of the Licensee's share of the profit share (and be responsible for the same proportion of losses in the profit share) in exchange for receiving such same percentage of the profit share payments received by Licensee in such deal), and if the parties reach written agreement as to any of the foregoing it shall supersede this definition with respect to such profit share; recognizing that a profit share deal would likely be un-economic for the Licensee to enter into without such an exclusion or other arrangement with Harvard, Harvard agrees to negotiate promptly and in good faith with Licensee. In addition, to the extent that Licensee enters into a cross-license with a Third Party to achieve freedom-to-operate for Licensed Products while providing the Third Party with freedom-to-operate with respect to all or some portion of the Licensed Patents, the value of the licenses to Licensee as part of such cross-license, and the other routine contractual covenants by other parties to such cross-license, shall not be deemed to give rise to Non-Royalty Sublicense Income for purposes of this Agreement. In addition, no Change of Control transaction or other transaction giving rise to potential payments under Section 4.7 of this Agreement shall be deemed to be a Sublicense nor to give rise to Non-Royalty Sublicense Income.

1.66 **"Osage"** means Osage University Partners or any fund under common management with Osage University Partners.

1.67 **"Other Active Component(s)"** shall have the meaning set forth in Section 4.4.5.

1.68 **"Party"** or "party" means Harvard or Licensee and "**Parties**" or "**parties**" means both of them.

1.69 **"Patent Challenge"** means any direct — or indirect through the actions of another acting on Licensee's, its Affiliate's, or a Sublicensee's behalf or upon its or their instruction—dispute or challenge, or any knowing, willful, or reckless assistance in the dispute or challenge by another, of the validity, patentability, scope, priority, construction, non-infringement, inventorship, ownership or enforceability of any Patent Right or any claim thereof, or opposition or assistance in the opposition of the grant of any letters patent within the Patent Rights, in any legal or administrative proceedings in a court of law, before the United States Patent and Trademark Office or other similar agency or tribunal in any jurisdiction, or in arbitration including, without limitation, by reexamination, *inter partes* review, opposition, interference, post-grant review, nullity proceeding, preissuance submission, third party submission, derivation proceeding or declaratory judgment action. For clarity, a Patent Challenge shall not include (1) arguments made by Licensee that (a) distinguish the inventions claimed in patents or patent applications owned or controlled by Licensee ("**Licensee Patents**") from those claimed in the Patent Rights but (b) do not disparage the Patent Rights or challenge the validity, scope, or enforceability of the Patent Rights' claims (excluding any claims that have been abandoned, lapsed, expired, or are otherwise no longer in force) under applicable patent laws, regulations or administrative rules, in each case (i) in the ordinary course of ex parte prosecution of the Licensee Patents or (ii) in *inter partes* proceedings before the United States Patent and Trademark Office or other agency or tribunal in any jurisdiction (excluding interferences or derivation proceedings), or in arbitration, wherein the Licensee Patents have been challenged; (2) arguments or assertions as to whether the Patent Rights Cover a given product, to the extent arising in a Suit brought by Harvard; (3) Licensee payments of patent costs to another licensor or assignor of Licensee Patent Rights as required by the agreement under which the Licensee obtained rights to such patent rights, even if the licensor or assignor is engaging in behavior or presenting arguments that would themselves be considered a Patent Challenge if done by the Licensee; nor (4) Licensee being named as an essential party, real party in interest or other status similar to either of the foregoing, in an interference between Patent Rights and Licensee Patents or other adversarial proceeding similar to an interference.

1.70 **"Patent Rights"** means, in each case to the extent owned and controlled by Harvard: (a) the patents and patent applications listed in Exhibit 1.70 (including the PCT and/or U.S. utility application claiming priority to such application(s) that are filed on such application(s)); (b) any patent or patent application to which any patent application identified in (a) claims priority and any patent or patent application that claims priority to (excluding continuation-in-part patents or patent applications except to the extent described in (d) below) or is a divisional, continuation, reissue, renewal, reexamination, substitution or extension of any patent application identified in (a); (c) any patents issuing on any patent application identified in (a) or (b), including any reissues, renewals, reexaminations, substitutions or extensions thereof; (d) any claim of a continuation-in-part application or resulting patent (including any reissues, renewals, reexaminations, substitutions or extensions thereof) that is entitled to the priority date of, and is directed specifically to subject matter specifically described in, at least one of the patents or patent applications identified in (a), (b) or (c); (e) any foreign counterpart (including PCTs) of any patent or patent application identified in (a), (b) or (c) or of the claims identified in (d) ; and (f) any supplementary protection certificates, pediatric exclusivity periods, any other patent term extensions and exclusivity periods and the like of or based on any patents and patent applications identified in any of (a) through (e).

1.71 **"Phase 1 Clinical Study"** means a clinical study in any country involving the initial introduction of an investigational new drug into humans, typically designed to determine the metabolism and pharmacologic actions of the drug in humans, the side effects associated with increasing doses, and, if possible, to gain early evidence on effectiveness. In the United States, "**Phase 1 Clinical Study**" means a human clinical study that satisfies the requirements of 21 C.F.R. § 312.21(a).

1.72 **"Phase 2 Clinical Study"** means a human clinical study in any country conducted to evaluate the effectiveness of a drug for a particular indication or indications in patients with the disease or condition under study and, possibly, to determine the common short-term side effects and risks associated with the drug. In the United States, "**Phase 2 Clinical Study**" means a human clinical study that satisfies the requirements of 21 C.F.R. § 312.21 (b).

1.73 **"Phase 3 Clinical Study"** means a human clinical study in any country, whether controlled or uncontrolled, that is performed after preliminary evidence suggesting effectiveness of the drug under evaluation has been obtained, and intended to gather the additional information about effectiveness and safety that is needed to evaluate the overall benefit-risk relationship of the drug and to provide an adequate basis for physician labeling. In the United States, "**Phase 3 Clinical Study**" means a human clinical study that satisfies the requirements of 21 C.F.R. § 312.21 (c).

1.74 **"Plan"** shall have the meaning set forth in Section 3.4.

1.75 [Reserved].

1.76 **"Proceeds Factor"** means a number, not more than [**], determined by dividing the gross proceeds to Licensee from an applicable sale of Series B Preferred Stock by $[**].

1.77 **"Regulatory Approval"** means, with respect to a particular product or service, receipt of all regulatory clearances or approvals (which in the case of the EU may be through the centralized procedure) required in the jurisdiction in question for the sale of the applicable product or service in such jurisdiction, including receipt of pricing approval, if any, legally required for such sale.

1.78 **"Regulatory Authority"** means any applicable government regulatory authority involved in granting approvals for the clinical testing, manufacturing and marketing of a Licensed Product, including, in the United States, the FDA and the RAC.

1.79 **"Related Product"** means with respect to a Licensed Product (the "reference Licensed Product"), a Licensed Product targeting (a) the [**] and (b) (i) same [**] or [**] or (ii) a [**] or [**] whose alteration would have the same intended clinical outcome in the same intended patient population, in each case of clause (a), (b)(i) and (b)(ii) as the reference Licensed Product.

1.80 **"RNA Editor"** means a Base Editor that solely converts a nucleobase in polyribonucleic acid.

1.81 **"RNA Editor Product"** means a product candidate or product that contains or delivers an RNA Editor.

1.82 **"Series A Investors"** means [**], together with any other investors under common management with the foregoing.

1.83 **"Series A Post-Money"** means an amount determined by multiplying (a) the weighted average price per share of the Series A Preferred Stock sold by Licensee to the Series A Investors prior to the time of determination of the Actual Series B Valuation Multiple by (b) the number of shares of outstanding capital stock of Licensee on a Fully-Diluted Basis immediately prior to the first sale and issuance of Series B Preferred Stock (excluding for this purpose any securities issued in a bridge or similar financing that are convertible into, and are, at such first sale and issuance, converted into, Series B Preferred Stock). For purposes of the foregoing, any shares of Series A Preferred Stock that are deemed Series B Preferred Stock by operation of the definition of Series B Preferred Stock shall he excluded from the calculation of the weighted average price per share of the Series A Preferred Stock for purposes of clause (a) and shall be deemed excluded from the number of shares of outstanding capital stock for purposes of clause (b).

1.84 **"Series A Preferred Stock"** means Licensee's Series A Preferred Stock, par value $0.0001 per share.

1.85 **"Series B Pre-Money"** means an amount determined by multiplying (a) the weighted average price per share of Series B Preferred Stock sold by Licensee in a closing at the time of determination of the Actual Series B Valuation Multiple (including in any such weighted average calculation any discount attributable to the conversion of the first up-to-$[**] in principal amount of debt securities issued in a bridge or similar financing that converted into Series B Preferred Stock and excluding any other discount attributable to the conversion of such debt securities in excess of the first up-to-$[**] in principal amount) by (b) the number of shares of outstanding capital stock of Licensee on a Fully-Diluted Basis immediately prior to such closing (excluding for this purpose any securities issued in a bridge or similar financing that are convertible into, and are, at such closing, converted into, Series B Preferred Stock).

1.86 **"Series B Preferred Stock"** means any series of preferred stock of Licensee sold by Licensee in a financing transaction other than Series A Preferred Stock, provided that if Licensee has sold $[**] of Series A Preferred Stock, the term "Series B Preferred Stock" shall include any additional shares of Series A Preferred Stock sold by Licensee.

1.87 **"Shares"** has the meaning set forth in Section 4.1.1.

1.88 **"Skipped Milestone"** has the meaning set forth in Section 4.3.5.

1.89 **"Subcategory Product Milestones"** means the Development Milestones identified under the heading "Subcategory Product Milestones" in Exhibit 3.1.1.

1.90 **"Sublicense"** means: (a) any right (including any sublicense or covenant not to sue) granted by Licensee to any third party, under or with respect to or permitting any use or exploitation of any of the Patent Rights or otherwise permitting the development, manufacture, marketing, distribution, use and/or sale of Licensed Products or Enabled Products; (b) any option or other right granted by Licensee to any third party to negotiate for or receive any of the rights described under clause (a); or (c) any standstill or similar obligation undertaken by Licensee toward any third party not to grant any of the rights described in clause (a) or (b) to any other third party; in each case regardless of whether such grant of rights, option, standstill, or similar undertaking is referred to or is described as a sublicense. In addition, a transfer of an Affiliate of Licensee that holds any right, license, option or other right of the type described above (i.e., that would fall within this definition of Sublicense had such right, license, option or other right been granted by Licensee to a third party) to a third party (whether by merger, sale of assets, sale of stock or otherwise) shall be deemed a Sublicense.

1.91 **"Sublicensee"** means any person or entity granted a Sublicense.

1.92 **"Subscription Agreement"** means a Subscription Agreement in the form attached hereto as Exhibit 4.1.1.

1.93 **"Supporting Technology Patent Rights"** means any patent application identified under the heading "Supporting Technology Patent Rights" in Exhibit 1.70 ("**Listed Supportive Technology Filings**"), and all other patent applications and patents that fall within the Patent Rights definition of this Agreement based upon the presence of any Listed Supportive Technology Filing in Exhibit 1.70.

1.94 **"Term"** means the term of this Agreement as set forth in Section 10.1.

1.95 **"Third Party"** or "**third party**" means an entity that is not Harvard, Licensee, or an Affiliate of Licensee.

1.96 **"[**] Proposed Product"** means an actual or potential Licensed Product [**] that (a) [**] is actively researching, developing or commercializing and (b) with respect to which [**] has not entered into an agreement containing an option that remains in effect or a term sheet under which Licensee remains in good faith negotiations of a definitive agreement.

1.97 **"United States"** means the United States of America.

1.98 **"Valid Claim"** means: (a) a claim of an issued and unexpired patent within the Patent Rights that has not been (i) held permanently revoked, unenforceable, unpatentable or invalid by a decision of a court or governmental body of competent jurisdiction, unappealable or unappealed within the time allowed for appeal, (ii) rendered unenforceable through disclaimer or

otherwise, (iii) abandoned or (iv) permanently lost through an interference or opposition proceeding without any right of appeal or review, or not appealed or put in for review within the applicable statutory or regulatory period; or (b) a pending claim of a pending patent application within the Patent Rights that (i) has been asserted and continues to be prosecuted in good faith, (ii) has not been abandoned or finally rejected without the possibility of appeal or refiling, and (iii) has not been pending more than [**] years from the date of the first substantive office action on the filing. A pending claim that ceases to be a Valid Claim due to the foregoing time limit shall, if it later issues, qualify again as a Valid Claim, provided that it meets the requirements of clauses (a)(i)-(iv) of the foregoing definition.

1.99 **"Valuation Factor"** means a number, not to exceed [**], determined by dividing the Actual Series B Valuation Multiple by [**]; provided, however, that if the Series B Preferred Stock sold by Licensee that gives rise to an obligation by Licensee to make a payment under Section 4.3.2.2 is sold in a financing transaction in which the Series A Investors, along with other investors who purchased Series A Preferred Stock sold by Licensee prior to the time of determination of the Actual Series B Valuation Multiple, purchase more than [**] percent ([**]%) of the Series B Preferred Stock sold in such financing transaction, the Valuation Factor shall be [**].

1.100 **"Xeno-Transplantation"** [**].

2. License.

2.1 License Grants

2.1.1 Exclusive License Grants.

2.1.1.1 Subject to the terms and conditions set forth in this Agreement, Harvard hereby grants to Licensee an exclusive, worldwide, royalty-bearing license, sublicensable solely in accordance with Section 2.4 below, under the Base Editor Patent Rights, solely to make, have made, offer for sale, sell, have sold and import Licensed Products, solely for use within the Field. The foregoing exclusive license to make and have made Licensed Products solely for use within the Field expressly includes the exclusive license to make and have made in Non-Human/Recombinant Materials a Licensed Product solely for use within the Field.

2.1.1.2 Subject to the terms and conditions set forth in this Agreement, Harvard hereby grants to Licensee an exclusive, worldwide, royalty-bearing license, sublicensable solely in accordance with Section 2.4 below, under the Supporting Technology Patent Rights, solely to make, have made, offer for sale, sell, have sold and import Base Editor Products, solely for use within the Field. The foregoing exclusive license to make and have made Base Editor Products solely for use within the Field expressly includes the exclusive license to make and have made in Non-Human/Recombinant Materials a Base Editor Product solely for use within the Field.

2.1.1.3 For the avoidance of doubt, the exclusive licenses under this Section 2.1.1 do not include a license to make, have made, offer for sale, sell, have sold and import Enabled Products.

2.1.2 Non-Exclusive License Grant. Subject to the terms and conditions set forth in this Agreement, Harvard hereby grants to Licensee a non-exclusive, worldwide, royalty-bearing license, sublicensable solely in accordance with Section 2.4 below, under the Patent Rights, to research, have researched, develop (including human clinical development) and have developed (including human clinical development) Enabled Products. Such license shall not include selling, offering for sale, having sold, importing or otherwise commercializing Enabled Products.

2.2 Reservation of Rights, Certain Restrictions. Notwithstanding anything herein to the contrary:

2.2.1 Harvard retains the right, for itself and for other not-for-profit research organizations, to practice the Patent Rights within the scope of the license granted above, solely for research, educational and scholarly purposes;

2.2.2 the United States federal government retains rights in the Patent Rights pursuant to 35 U.S.C. §§ 200-212 and 37 C.F.R. § 401 et seq., and any right granted in this Agreement greater than that permitted under 35 U.S.C. §§ 200-212 or 37 C.F.R. § 401 et seq. will be subject to modification as may be required to conform to the provisions of those statutes and regulations;

2.2.3 Harvard retains the rights, for itself, set forth in Sections 2.5, 3.1.2, 3.1.3 and 6.3;

2.2.4 Further, Licensee acknowledges that it has been informed that the Patent Rights were developed, at least in part, by employees of HHMI and that HHMI has a fully paid-up, non-exclusive, irrevocable, worldwide license to exercise any intellectual property rights with respect to such Patent Rights for research purposes, with the right to sublicense to non-profit and governmental entities (the **"HHMI License**"). Any and all licenses and other rights granted under this Agreement are explicitly made subject to the HHMI License; and

2.2.5 Further, Licensee agrees that the licenses granted by Harvard to Licensee hereunder shall not include any license under the Patent Rights for human germline modification, including intentionally modifying the DNA of human embryos or human reproductive cells (the field of "**Human Germline Modification**"). Harvard hereby covenants that it shall not grant any entity any license under the Patent Rights to practice Human Germline Modification. Licensee agrees that it shall not use the Patent Rights for Human Germline Modification.

2.3 Affiliates. The licenses granted to Licensee under Section 2.1.1 and Section 2.1.2 include the right to have some or all of Licensee's rights or obligations under this Agreement exercised or performed by one or more of Licensee's Affiliates, solely on Licensee's behalf; provided, however, that:

2.3.1 prior to any Affiliate exercising or performing any of Licensee ' s rights or obligations under this Agreement, such Affiliate shall agree in writing with Licensee to be bound by the terms and conditions of this Agreement as if it were Licensee hereunder, including specific written agreement (a) to indemnify, defend and hold Indemnitees and HHMI Indemnitees harmless, and carry insurance, under the same terms as Article 9 of this Agreement, and (b) that Harvard and HHMI are express third party beneficiaries of such writing; provided that nothing in this Section 2.3.1 is intended to increase the payments (or the number of payments) to Harvard under this Agreement (for non-limiting examples, an Affiliate agreeing to the terms and conditions of this Agreement as if it were Licensee hereunder shall not increase the number of times the milestone tables in Article 4 can be run and shall not give rise to additional Win State Payments);

2.3.2 no such Affiliate shall be entitled to grant, directly or indirectly, to any third party any right of whatever nature under, or with respect to, or permitting any use or exploitation of, any of the Patent Rights, including any right to develop, manufacture, market or sell Licensed Products;

2.3.3 prior to any Affiliate exercising or performing any of Licensee's rights or obligations under this Agreement, such Affiliate shall agree in writing that it shall not practice the license under the Patent Rights for Human Germline Modification (except to the extent that the Licensee would have the right to do so after notice from Harvard of a permitted application within Human Germline Modification); and

2.3.4 any act or omission taken or made by an Affiliate of Licensee under this Agreement will be deemed an act or omission by Licensee under this Agreement.

2.4 Sublicenses.

2.4.1 Sublicense Grant. Licensee will be entitled to grant Sublicenses to third parties under the licenses granted pursuant to Section 2.1 subject to the terms of this Section 2.4; provided, however, that no Sublicense may be granted under the license granted pursuant to Section 2.1.2 except in connection with a bona fide collaboration with a third party to research or develop one or more Licensed Product(s) under a Sublicense granted under the licenses granted pursuant to Section 2.1.1. Any such Sublicense shall be on terms and conditions in compliance with and not inconsistent with the terms of this Agreement. The Parties agree that any such Sublicense granted under the license granted pursuant to Section 2.1.2 shall not become invalid hereunder even if the original Licensed Product(s) that were included in the subject matter of such Sublicense under the licenses granted pursuant to Section 2.1.1 cease to be Licensed Product(s) at a later date or fail or are discontinued in development and shall instead continue in full force and effect.

2.4.2 Sublicense Agreements. Licensee shall grant sublicenses pursuant to written agreements, which will be subject and subordinate to the terms and conditions of this Agreement. Such Sublicense agreements will contain, among other things, the following:

2.4.2.1 all provisions necessary to ensure Licensee's ability to perform its obligations under this Agreement;

2.4.2.2 a section requiring Sublicensee to indemnify, defend and hold Indemnitees and HHMI Indemnitees harmless, and carry insurance, under the same terms set forth in Article 9 of this Agreement (which obligation to indemnify, defend, and hold harmless, to avoid doubt, may be limited to the activities under the Sublicense (*e.g.*, the Sublicensee shall not be required to indemnify for activities arising under other unrelated Sublicenses to unrelated Third Parties)), which also will state that the Indemnitees and HHMI Indemnitees are intended third party beneficiaries of such Sublicense agreement for the purpose of enforcing such indemnification;

2.4.2.3 a statement that Harvard is an intended third party beneficiary of such Sublicense for the purpose of enforcing all patent challenge, indemnification, and insurance provisions of such Sublicense and enforcing the right to terminate such Sublicense for breach of the patent challenge, indemnification and insurance provisions of such Sublicense; and a statement that HHMI is an intended third party beneficiary of such Sublicense for the purpose of enforcing HHMI's rights, including indemnification and insurance provisions, under this Agreement;

2.4.2.4 a provision stating that in the event Sublicensee directly or indirectly brings, assumes, or participates in, or knowingly, willfully or recklessly assists in bringing, a Patent Challenge then Licensee shall be entitled to terminate the Sublicense;

2.4.2.5 a provision clarifying that, in the event of termination of the licenses set forth in Section 2.1 (in whole or in part (*e.g.*, termination in a particular country)), any existing Sublicense agreement shall terminate to the extent of such terminated license;

2.4.2.6 a provision prohibiting the Sublicensee from sublicensing its rights under such Sublicense agreement through more than [**] additional tiers, provided that such further Sublicense also shall comply with the terms of this Section 2.4;

2.4.2.7 a provision requiring the Sublicensee to notify Licensee of the achievement of each milestone described in Section 4.3.1 within [**] days after such achievement;

2.4.2.8 a provision requiring the Sublicensee to comply with Section 8.1 (Compliance with Law) and Section 11.4 (Use of Name) of this Agreement;

2.4.2.9 a provision requiring the Sublicensee to agree that it shall not use the Patent Rights for Human Germline Modification; and

2.4.2.10 a provision prohibiting the Sublicensee from assigning the Sublicense agreement without the prior written consent of Harvard, except that Sublicensee may assign the Sublicense agreement to a successor in connection with the merger, consolidation or sale, lease or other transfer of all or substantially all of its assets or that portion of its business to which the Sublicense agreement relates; provided, however, that any permitted assignee agrees in writing to be bound by the terms of such Sublicense agreement.

2.4.3 Delivery of Sublicense Agreement. Licensee shall furnish Harvard with a fully executed copy of any Sublicense agreement, promptly after its execution. Harvard shall keep all such copies in its confidential files and shall use them solely for the purpose of monitoring Licensee's and Sublicensees' compliance with their obligations hereunder and enforcing Harvard's rights under this Agreement. Licensee shall be entitled to redact sensitive information and/or research plans not reasonably required to monitor Licensee's and Sublicensee's compliance with their obligations hereunder and enforcing Harvard's rights under this Agreement.

2.4.4 Breach by Sublicensee. Licensee shall be responsible for any breach of a Sublicense agreement by any Sublicensee that results in a material breach of this Agreement. Licensee shall either (a) cure such breach in accordance with Section 10.2.2 of this Agreement or (b) enforce its rights by seeking to terminate such Sublicense agreement in accordance with the terms thereof. It is understood that if Licensee cures such breach or has diligently sought to enforce, and continues to diligently seek to enforce to the extent possible, its right to terminate such Sublicense agreement, including by, at minimum, taking all required steps to seek to terminate such Sublicense agreement in accordance with the terms thereof and contesting any contrary claim by the Sublicensee, Licensee shall not be subject to termination of this Agreement for the breach by the Sublicensee even though it resulted in a material breach of this Agreement.

2.5 [**] Proposed Products.

2.5.1 If a third party inquires with Harvard for a license under the Base Editor Patent Rights with respect to products for use in the Field or for a license under the Supporting Technology Patent Rights with respect to Base Editor Products for use in the Field, in each case while this Agreement is in effect, Harvard may refer such third party to Licensee to seek a potential Sublicense.

2.5.2 Sections 2.5.3 through 2.5.10 shall apply only from and after the [**] anniversary of the Effective Date ("**Start Date**"). Prior to Start Date, Harvard shall have no right to invoke such Sections.

2.5.3 If after the Start Date a third party that (a) is not a Competitor and (b) has attempted in good faith but has not entered into a Sublicense with Licensee as of [**] months after the third party first contacted Licensee for such Sublicense after being referred to Licensee by Harvard, makes a Bona Fide Proposal to Harvard for developing what Harvard reasonably believes is a [**] Proposed Product for the prevention or treatment of a human disease that is Covered by the Base Editor Patent Rights or, to the extent such [**] Proposed Product is a Base Editor, is Covered by the Supporting Technology Patent Rights, and Harvard is interested in

having such [**] Proposed Product developed and commercialized, Harvard may notify Licensee of the third party's Bona Fide Proposal and shall include in such notification all information in Harvard's possession regarding such Bona Fide Proposal, including a copy thereof; provided, however, that Harvard may redact any confidential information Harvard is not permitted to share with Licensee under the terms of any confidentiality agreement between Harvard and the third party making such Bona Fide Proposal, after seeking permission to make such disclosure and indicating to the Third Party that either Harvard or the Third Party will have to make such disclosure to Licensee in order for a Sublicense or a [**] License to be available by the process provided in this Section 2.5, and Harvard shall include with such notification a further notice if Harvard was not permitted to share with Licensee any such confidential information of such third party. Within [**] days after the receipt of such notification from Harvard, Licensee shall notify Harvard whether it is interested in developing such [**] Proposed Product for the prevention or treatment of such human disease, is interested in further discussing a Sublicense with the third party, or is interested in Sublicensing a different third party(ies). Harvard shall not entertain Bona Fide Proposals prior to the Start Date, nor from any third party who has not first engaged in [**] months of good faith discussions with the Licensee, or is a Competitor.

2.5.4 If the proposal does not meet the definition of Bona Fide Proposal, the proposed product is not a [**] Proposed Product, or the third party is a Competitor, then Sections 2.5.5 through 2.5.10 shall not apply (and without limiting the generality of the foregoing Harvard shall have no right to grant a [**] License to such third party with respect to such [**] Proposed Product nor to require that Licensee grant a Sublicense or provide a development plan and development milestones in relation thereto).

2.5.5 If Licensee notifies Harvard within such [**] day period that Licensee is interested in developing such [**] Proposed Product for the prevention or treatment of such human disease, the parties will negotiate in good faith and agree, during the [**] days following such notification by Licensee, upon a development plan with respect to such [**] Proposed Product, which development plan will be similar to the Development Plan with respect to other Licensed Products developed by Licensee, subject to necessary adjustments, and will include reasonable development milestones, including at least one preclinical development milestone, and associated timelines. In the discussion of such development plan and development milestones, Harvard shall not unreasonably withhold its consent to Licensee's proposed plan. If the parties agree on such development plan and milestones within such ninety [**] day period, Licensee shall maintain its exclusive license(s) hereunder with respect to such [**] Proposed Product for the prevention or treatment of such human disease, but shall be obligated (a) to use commercially reasonable efforts to develop and commercialize the [**] Proposed Product for the prevention or treatment of such human disease in accordance with such new development plan (which shall be incorporated into and be part of the "Development Plan" for all purposes hereunder) and (b) to meet the development milestones on the timeline associated therewith with respect to the [**] Proposed Product (which shall be a "Development Milestone" for all purposes hereunder) for the prevention or treatment of such human disease (subject to extension in the same manner as provided in Sections 3.4.1 through 3.4.5, applied *mutatis mutandis*). Exhibit 3.1.1 shall be amended to reflect such development milestones and timeline with respect to such [**] Proposed Product.

2.5.6 If (a) within such [**] day period, Licensee fails to notify Harvard that Licensee is interested in developing such [**] Proposed Product for the prevention or treatment of such human disease or notifies Harvard that Licensee is not interested in developing such [**] Proposed Product for the prevention or treatment of such human disease or (b) the parties do not agree on a development plan and development milestones that are acceptable to Harvard in its reasonable judgment Harvard will be entitled, [**] Licensee beyond that provided in Section 2.5.10, to (A) [**] the licenses granted under Section 2.1.1 under the [**] with respect to such [**] Proposed Product for the prevention or treatment of such human disease, (B) grant to [**] an [**] license under such [**] solely to make, have made, offer for sale, sell, have sold and import such [**] Proposed Product for the prevention or treatment of such human disease, and (C) grant to [**] a non-exclusive license under the Patent Rights other than the [**] solely to make, have made, offer for sale, sell, have sold and import such [**] Proposed Product for the prevention or treatment of such human disease.

2.5.7 If Licensee states in its notification to Harvard that it is not interested in developing such [**] Proposed Product for the prevention or treatment of such human disease but that it wishes to grant a Sublicense to such third party with respect to such [**] Proposed Product for the prevention or treatment of such human disease, Licensee will have [**] months (or [**]) to negotiate and enter into such a Sublicense agreement with [**]; provided, however, that if Licensee demonstrates that it and [**] have entered into a term sheet with respect to such a Sublicense agreement during such [**] months and remain in active negotiations of a definitive agreement at the end of such [**] months, Licensee will be entitled to [**] for the execution of a [**] by an additional [**] months. In addition, the first of the foregoing [**] month periods shall be tolled for any delays in the provision of any confidential information that was present in the Bona Fide Proposal provided to Harvard by [**] and Harvard was not permitted to share with Licensee under the terms of any confidentiality agreement between Harvard and such third party that exceed [**] days after request for such confidential information by Licensee following the execution of a confidentiality agreement between Licensee and [**]; provided, however, that in order to avail itself of such extension Licensee must notify Harvard of such delay within [**] days of such failure to provide such confidential information within [**] days after such request by Licensee and of the date on which such confidential information was provided to Licensee by [**] within [**] days after such confidential information was provided.

2.5.8 If Licensee does not enter into such a [**] agreement within such [**] month or [**] month period, as applicable, Licensee shall promptly (but in any event within [**] business days of the end of such period) provide Harvard in writing an explanation for such not entering into such a [**] agreement along with the proposed terms offered by Licensee to [**]. If Harvard reasonably determines in its good faith judgment that the terms offered by Licensee to [**] were not commercially reasonable, Harvard shall notify Licensee of such determination and provide Licensee with an additional [**] days to enter into [**]; such notices shall explicitly state what modified terms Harvard would consider commercially reasonable. If Licensee does not enter into an agreement with [**] within such additional [**] day period, then Harvard will be entitled, [**] to Licensee except as expressly set forth in Section 2.5.10, to (A) [**] with respect to such [**] Proposed Product for the prevention or treatment of such human disease, (B) grant [**] an [**] license under such [**] solely to make, have made, offer for sale, sell, have

sold and import such [**] Proposed Product for the prevention or treatment of such human disease, and (C) grant to [**] under the Patent Rights other than the [**] to make, have made, offer for sale, sell, have sold and import such [**] Proposed Product for the prevention or treatment of such human disease.

2.5.9 In parallel with or in lieu of seeking to Sublicense [**] who proposed the [**] Proposed Product, the Licensee may seek to enter into a Sublicense with another third party. If the Licensee enters into such a Sublicense with another third party within [**] months after Licensee's notice to Harvard under Section 2.5.3, which may be extended by an additional [**] months if Licensee demonstrates that it and such other third party have entered into a term sheet with respect to such a Sublicense agreement during such [**] months and remain in active negotiations of a definitive agreement at the end of such [**] months, then Licensee shall have the right to discontinue any discussions under Section 2.5.7 or 2.5.8 without consequence and as long as the Sublicense with the third party that Licensee entered into remains in effect, Harvard shall have no right to grant a [**] License for the applicable [**] Proposed Product.

2.5.10 A license by Harvard to a third party under Section 2.5.6 or 2.5.8 is a "[**] **License**." [**] License [**] is "[**]." The financial terms of any [**] License [**]. The financial terms of any [**] License shall not be required to have any other elements of financial consideration other than [**]. Licensee shall be [**]. Licensee may elect to take such [**]. If any [**] License is granted, Harvard shall report on a [**] basis in writing to Licensee as to any and all [**] received by Harvard or its designee, whether zero or a positive number. Such reports and any related records shall be subject to audit by the Licensee on terms equivalent to those set forth in Section 5.3, applied *mutatis mutandis*, provided, however, that such audit shall be limited to an audit of Harvard's records and shall not extend to any licensee under a [**] License (either directly or by causing Harvard to exercise any audit rights it may have under the [**] License), and such audit shall be limited in scope to a determination that Harvard's report of [**] is true and complete.

2.6 No Other Grant of Rights. Except as expressly provided herein, nothing in this Agreement will be construed to confer any ownership interest, license or other rights upon Licensee by implication, estoppel or otherwise as to any technology, intellectual property rights, products or biological materials of Harvard, or any other entity, regardless of whether such technology, intellectual property rights, products or biological materials are dominant, subordinate or otherwise related to any Patent Rights.

3. Development and Commercialization.

3.1 Diligence.

3.1.1 General. Licensee shall use commercially reasonable efforts and shall cause its Sublicensees to use commercially reasonable efforts: (a) to develop Licensed Products in accordance with the Development Plan; (b) to introduce any Licensed Products that gain Regulatory Approval into the commercial market; (c) to market Licensed Products that have gained Regulatory Approval following such introduction into the market; and (d) to make

Licensed Products that have gained Regulatory Approval reasonably available to the public. In addition, Licensee, by itself or through its Affiliates or Sublicensees, shall achieve each of the Development Milestones within the time periods specified in Exhibit 3.1.1, as they may be extended in accordance with this Agreement.

3.1.2 Developing Countries. At any time beginning [**] after Regulatory Approval of any Licensed Product in the United States or an EU Major Market Country, Harvard shall have the right to grant third parties the non-exclusive right under the Patent Rights to develop, manufacture, have manufactured, import, have imported, offer for sale, sell, have sold or otherwise distribute or have distributed such Licensed Product or an equivalent thereof (*e.g.*, a generic product), in each case solely for sale or other distribution of such Licensed Product or equivalent on a locally-affordable basis in any Developing Country(ies) in which such Licensed Product is not then available on a locally-affordable basis and not in any Developed Country, solely and exclusively for administration to citizens and permanent legal residents of such Developing Country(ies) in which such Licensed Product is not then available on a locally-affordable basis (such right, a "**Developing Country Locally-Affordable Citizen License**"). Harvard hereby reserves the non-exclusive right to grant such non-exclusive rights to third parties, solely and exclusively in the circumstances described in this Section 3.1.2. Notwithstanding the foregoing, at any time beginning [**] after Regulatory Approval of any Licensed Product in the United States or an EU Major Market Country, but in any event no later than [**] prior to granting any Developing Country Locally-Affordable Citizen License with respect to any Licensed Product, Harvard shall notify Licensee in writing, and if requested by Licensee, Harvard shall meet with Licensee and discuss in good faith Licensee's (or its Affiliate's or Sublicensee's) plans to seek Regulatory Approval for and subsequently market such Licensed Product in the Developing Countries that were the subject of Harvard's written notice or any concerns of Licensee related to marketing in such country. In addition, Harvard shall not grant a Developing Country Locally-Affordable Citizen License without identifying in writing to Licensee the potential licensee and if requested by Licensee meeting with Licensee to discuss, and subsequently considering in good faith, any concerns of the Licensee with respect to such potential licensee. The terms of any Developing Country Locally-Affordable Citizen License shall require the licensee thereof to sell only on a locally affordable basis, and shall require that the licensee sell only for administration to citizens and permanent legal residents of the applicable Developing Country. All consideration to Harvard (or its designee) under a Developing Country Locally-Affordable Citizen License (other than reimbursement for patent expenses paid to third parties at out-of-pocket cost to Harvard) is "**Developing Country Consideration.**" Licensee shall be entitled to a share of any and all Developing Country Consideration received by Harvard (or its designee) equal to the total Developing Country Consideration, minus the share that Harvard would have received under this Agreement if the Developing Country Locally-Affordable Citizen License had been a Sublicense agreement on the same terms entered into between Licensee and the third party. Licensee may [**]. If any Developing Country Locally-Affordable Citizen License is granted, Harvard shall report on a [**] basis in writing to Licensee as to any and all Developing Country Consideration received by Harvard or its designee, whether zero or a positive number. Such reports and any related records shall be subject to audit by the Licensee on terms equivalent to those set forth in Section 5.3, applied *mutatis mutandis*, provided, however, that such audit shall be limited to an audit of

Harvard's records and shall not extend to any licensee under a Developing Country Locally-Affordable Citizen License (either directly or by causing Harvard to exercise any audit rights it may have under the Developing Country Locally-Affordable Citizen License), and such audit shall be limited in scope to a determination that Harvard's report of Developing Country Consideration is true and complete. Any Developing Country Locally-Affordable Citizen License shall be clearly limited to the applicable Developing Country, and Harvard shall take action to terminate the Developing Country Locally-Affordable Citizen License if the licensee sells outside of its licensed territory. For clarity, notwithstanding anything express or implied in the foregoing, Licensee does not grant Harvard any right under patent rights, know-how, data, or other assets or intellectual property rights owned or controlled by Licensee with respect to any Licensed Product for Developing Country(ies) or otherwise, and Harvard's reserved rights above are limited to the Patent Rights.

3.1.3 Sub-Categories of Base Editor Patent Rights. If within [**] years after the Effective Date, Licensee has not initiated a discovery program in accordance with the then current Development Plan and Development Milestones for the development of a Licensed Product covered by a Valid Claim for a Sub-Category of Base Editor Patent Rights ("**Failed Sub-Category of Base Editor Patent Rights**"), the license to such Failed Sub-Category of Base Editor Patent Rights will terminate, and Harvard shall have the right to grant to third party licensees of such Failed Sub-Category of Base Editor Patent Rights, a non-exclusive license under the Patent Rights other than such Failed Sub-Category of Base Editor Patent Rights solely to make, have made, offer for sale, sell, have sold and import products Covered by such Failed Sub-Category of Base Editor Patent Rights in the Field, which non-exclusive license shall not extend to components of such product that are a different category of Base Editor than the category of Base Editor that is the subject matter of such Failed Sub-Category of Base Editor Patent Rights. As a non-limiting example of the foregoing exclusion, [**].

The foregoing paragraph may apply to multiple Sub-Categories of Base Editor Patent Rights, if there are multiple Failed Sub-Categories of Base Editor Patent Rights.

3.2 Adjustments of Development Plan.

3.2.1 Within [**] months after the Effective Date, Licensee shall submit to Harvard a written plan for the development and commercialization of Licensed Products, which shall be attached hereto as Exhibit 3.2.1. Such plan shall be designed to meet the Development Milestones attached in Exhibit 3.1.1, on the timeline provided in Exhibit 3.1.1. Harvard shall have the right to approve Licensee's submitted Development Plan, such approval not to be unreasonably withheld, delayed, or conditioned. Harvard shall be reasonably available to meet and discuss with Licensee as Licensee is preparing the Development Plan, to help ensure consensus as to the Development Plan that Licensee will submit.

3.2.2 Within [**] years after the Effective Date, Licensee shall update its Development Plan and Development Milestones to include the elements required by the Subcategory Product Milestones. Harvard shall have the right to approve Licensee's submitted, updated Development Plan, such approval not to be unreasonably withheld, delayed, or conditioned. Harvard shall be reasonably available to meet and discuss with Licensee as Licensee is preparing the updated Development Plan, to help ensure consensus as to the Development Plan that Licensee will submit.

3.2.3 Licensee will be entitled, from time to time, to make such adjustments to the then applicable Development Plan as Licensee believes, in its good faith judgment, are needed in order to improve Licensee's ability to meet the Development Milestones.

3.3 Reporting. Within [**] days after the end of each calendar year, Licensee shall furnish Harvard with a written report summarizing its, its Affiliates' and its Sublicensees' efforts during the prior year to develop and commercialize Licensed Products, including: (a) research and development activities; (b) commercialization and/or other distribution efforts; and (c) marketing efforts. Each report must contain a sufficient level of detail for Harvard to assess whether Licensee is in compliance with its obligations under Section 3.1 and a discussion of intended efforts for the then current year. Together with each report, Licensee shall provide Harvard with a copy of the then current Development Plan.

3.4 Failure to Meet Development Milestone: Opportunity to Cure.

3.4.1 Notice/Explanation/Plan. If Licensee believes that it will not achieve a Development Milestone by the then-applicable deadline (i.e., the original timeline therefor in Exhibit 3.1.1, or any extension thereto in accordance with this Agreement) ("**Milestone Deadline**") or that such then-applicable Milestone Deadline needs to be or should be extended, it may notify Harvard in writing in advance of the relevant deadline, explicitly referencing this Section 3.4.1. Licensee shall include with such notice (a) a reasonable explanation of the reasons for such failure or need for extension (and lack of finances will not constitute reasonable basis for such failure or need for extension) ("**Explanation**") and (b) a reasonable, detailed, written plan for promptly achieving a reasonable extended and/or amended milestone ("**Plan**").

3.4.2 Missing Plan or Explanation. If Licensee so notifies Harvard, but fails to provide Harvard with both an Explanation and Plan, then Licensee will have an additional [**] days or until the original deadline of the relevant Development Milestone, whichever is later, to meet such milestone. [**].

3.4.3 Sufficient Notice/Explanation/Plan. If Licensee notifies Harvard as provided in Section 3.4.1 and provides Harvard with an Explanation and Plan, both of which are acceptable to Harvard in its reasonable discretion, then Exhibit 3.1.1 will be amended automatically to incorporate the extended and/or amended milestone set forth in the Plan.

3.4.4 Explanation Discussions. If Licensee so notifies Harvard and provides Harvard with an Explanation and Plan, but the Explanation is not acceptable to Harvard in its reasonable discretion (*e.g.*, Licensee asserts lack of finances or development preference for a non-Licensed Product), then Licensee will have an additional [**] days or until the original deadline of the relevant Development Milestone, whichever is later, to meet such milestone. [**].

3.4.5 Plan Discussions. If Licensee so notifies Harvard and provides Harvard with an Explanation and Plan, but the Plan is not acceptable to Harvard in its reasonable discretion, then Harvard will explain in writing to Licensee why the Plan is not acceptable and provide Licensee with written suggestions for an acceptable Plan. Licensee will have one opportunity to provide Harvard with an acceptable Plan within [**] days, during which time Harvard agrees to work with Licensee in good faith in Licensee's effort to develop a reasonably acceptable Plan. If, within such [**] days, Licensee provides Harvard with an acceptable Plan, then Exhibit 3.1.1 will be amended automatically to incorporate the extended and/or amended milestone set forth in the Plan. If, within such [**] days, Licensee fails to provide an acceptable Plan, then Licensee will have an additional [**] days or until the original deadline of the relevant Development Milestone, whichever is later, to meet such milestone.

3.4.6 Unmet Deadline. Licensee's failure to meet the then-current Milestone Deadline for any Development Milestone (taking into account any extension or modification thereof as a result of the applicable procedures set forth in Sections 3.4.1 through 3.4.5) [**]:

3.4.6.1 If such failure is a failure to meet the first Development Milestone ("Initiate a discovery program …") with respect to [**] Licensed Products within the timeframe set forth on Exhibit 3.1.1 [**].

3.4.6.2 If such failure relates to (a) a Licensed Product that was a [**] Proposed Product for which Licensee exercised its rights under Section 2.5.5, (b) a Licensed Product that was a Retained Product for which Licensee retained the licenses under Section 2.1.1 in accordance with the terms of Section 3.4.6.3 or (c) a Licensed Product that was a Restored Product for which Licensee was granted the licenses under Section 2.1.1 in accordance with the terms of Section 3.4.7.3. Harvard will be entitled, without any compensation or accounting to Licensee, to terminate forthwith, immediately upon written notice to Licensee, the licenses granted under Section 2.1.1 with respect to such Licensed Product. Upon such termination, Harvard shall be entitled to grant to any third party(ies) an exclusive or non-exclusive license(s) under the Patent Rights to make, have made, offer for sale, sell, have sold and import such Licensed Product for use within the Field or outside the Field.

3.4.6.3 If such failure is not a failure provided for under Section 3.4.6.1 or Section 3.4.6.2, Harvard shall be entitled, without any compensation or accounting to Licensee, to terminate forthwith, immediately upon written notice to Licensee, the licenses granted under Section 2.1.1 with respect to all Licensed Products for which Licensee has not achieved Initiation of GLP Toxicology prior to the date of such notice (other than any such Licensed Products that are Related Products to a Licensed Product for which Licensee has achieved Initiation of GLP Toxicology prior to the date of such notice). Promptly after receipt of such notice (and in any event within [**] days thereof), Licensee shall deliver to Harvard a true, correct and complete list of all Licensed Products for which Licensee has achieved Initiation of GLP Toxicology prior to

the date of such notice (the "**Retained Product List**") and sufficient information for Harvard to identify Related Products (i.e., [**], splicing variant or mutation, intended patient population and intended clinical outcome) to such Licensed Products. For each such Licensed Product (each, a "**Retained Product**"), Licensee shall follow the following procedure:

> For each Retained Product, the parties will negotiate in good faith and agree, during the [**] days following the date Licensee provided the Retained Product List to Harvard, upon a development plan with respect to such Retained Product, which development plan will be similar to the Development Plan with respect to other Licensed Products that were being developed by Licensee, subject to necessary adjustments, and will include reasonable development milestones, including at least [**] preclinical development milestone if such Retained Product is a preclinical product, and associated timelines. In the discussion of such development plan and development milestones, Harvard shall not unreasonably withhold its consent to Licensee's proposed plan. If the parties agree in writing on such development plan and development milestones within such [**] day period, Harvard shall grant to Licensee, and shall be deemed to have granted to Licensee, the licenses under Section 2.1.1 to make, have made, offer for sale, sell, have sold and import such Retained Product and Related Products to such Retained Product for use within the Field, but Licensee shall be obligated (a) to use commercially reasonable efforts to develop and commercialize the Retained Product for the prevention or treatment of such human disease in accordance with such new development plan (which shall be incorporated into and be part of the "Development Plan" for all purposes hereunder) and (b) to meet the development milestones on the timeline associated therewith with respect to the Retained Product (which shall be a "Development Milestone" (which shall not be subject to extension in the manner provided in Sections 3.4.1 through 3.4.5, but shall only be subject to extension in Harvard's sole discretion). Exhibit 3.1.1 shall be amended to reflect such development milestones and timeline with respect to such Retained Product. If the parties do not agree in writing on such development plan and milestones for such Retained Product within such [**] day period, the licenses under Section 2.1.1 to make, have made, offer for sale, sell, have sold and import such Retained Product and Related Products to such Retained Product shall be deemed terminated as of 11:59 p.m. Eastern Time on the last day of such period.

Notwithstanding anything in this Agreement to the contrary, the procedure set forth in Sections 3.4.1 through 3.4.5 shall not be applicable to extend the Development Milestones for a Licensed Product that was a Retained Product (although the Development Plan may still be updated with respect thereto without modifying the Development Milestones, and the Development Milestones may still be modified with Harvard's consent in its sole discretion).

Notwithstanding anything in this Section 3.4.6 to the contrary, for any Retained Product for which a Retained Product or a Related Product to such Retained Product already had a Development Plan and Development Milestones in place, and such Retained Product or a Related Product to such Retained Product that already had a Development Plan and Development Milestones in place has not missed such Development Milestones, such Development Plan and Development Milestones shall remain in place, with no requirement to negotiate a new Development Plan and new Development Milestones with respect thereto for such Retained Product or a Related Products to such Retained Product.

3.4.7 If Harvard has terminated the licenses granted under Section 2.1.1 in accordance with the terms of Section 3.4.6.3 and during the Term, Licensee wishes to obtain the licenses under Section 2.1.1 with respect to a product for which Licensee does not have a license under Section 2.1.1 and that was, prior to such termination, within the definition of Licensed Product (each, a "**Restored Product**" and such licenses, "R**estored Licenses**"), Licensee shall notify Harvard, and Harvard and Licensee shall follow the procedures below:

3.4.7.1 Licensee shall make a proposal to Harvard equivalent in all material respects to a Bona Fide Proposal to Harvard for developing such Restored Product for the prevention or treatment of a human disease, including with such proposal a statement of the extent such Restored Product is Covered by the Base Editor Patent Rights or the Supporting Technology Patent Rights and sufficient information for Harvard to identify Related Products (i.e., [**], splicing variant or mutation, indicated patient population and clinical outcome) to such Restored Product. If Harvard is interested in having such Restored Product developed and commercialized, Harvard has not granted to any third party (such third parties including for purposes of this Section 3.4.7.1 Affiliates of Licensee) any rights or licenses that would be breached by the grant of the Restored Licenses and the grant by Harvard of the Restored Licenses would not otherwise be in conflict with any contract, agreement, arrangement or understanding between Harvard and a third party, Harvard shall notify Licensee.

3.4.7.2 If the proposal does not meet the definition of Bona Fide Proposal (as applied to the Restored Product and not a [**] Proposed Product), then Section 3.4.7.3 shall not apply.

3.4.7.3 If Licensee notifies Harvard within [**] days after Harvard has notified Licensee pursuant to the last sentence of Section 3.4.7.1, the parties will negotiate, during the [**] days following such notification by Licensee, a development plan with respect to such Restored Product, which development plan will be similar to the Development Plan with respect to other Licensed Products developed by Licensee, subject to necessary adjustments, and will include reasonable development milestones, including at least one preclinical development milestone if such Restored Product is a preclinical product, and associated timelines. [**]. If the parties agree in writing on such development plan and milestones within such [**] day period, Harvard shall grant to Licensee, and shall be deemed to have granted to Licensee, the licenses under Section 2.1.1 to make, have made, offer for sale, sell, have sold and import such Restored Product

and Related Products to such Restored Product for use within the Field, but Licensee shall be obligated (a) to use commercially reasonable efforts to develop and commercialize the Restored Product in the Field in accordance with such new development plan (which shall be incorporated into and be part of the "Development Plan" for all purposes hereunder) and (b) to meet the development milestones on the timeline associated therewith with respect to the Restored Product (which shall be a "Development Milestone" (for all purposes hereunder) (subject to extension in the same manner as provided in Sections 3.4.1 through 3.4.5, applied *mutatis mutandis*). Exhibit 3.1.1 shall be amended to reflect such development milestones and timeline with respect to such Restored Product. [**].

3.4.7.4 For clarity, the provisions of this Section 3.4.7 shall not apply to any product with respect to which Harvard exercised its rights under Section 3.4.6.2 to terminate the licenses under Section 2.1.1.

3.5 Certain Editors. "**RNA Milestone**" means the Development Milestone identified under the heading "RNA Editor Product" in Exhibit 3.1.1. [**]. If Licensee has not achieved the RNA Milestone by the then-applicable deadline (i.e., the original timeline therefor in Exhibit 3.1.1 or any extension thereto granted by Harvard in its sole discretion), Licensee shall notify Harvard promptly and will have an additional [**] days to achieve such milestone. If Licensee does not achieve the RNA Milestone within such [**] days, then Harvard may by written notice to Licensee exclude RNA Editors and RNA Products from the Licensed Products and the licenses granted herein. Notwithstanding anything express or implied, not meeting the then-applicable deadline for the RNA Milestone shall in any event not be deemed a breach of this Agreement and shall not give rise to a right for Harvard to terminate this Agreement.

3.6 Xeno-Transplantation. "**Xeno-Transplantation Milestone**" means the Development Milestone Identified under the heading "Xeno-Transplantation" in Exhibit 3.1.1. [**]. If Licensee has not achieved the Xeno-Transplantation Milestone by the then-applicable deadline (i.e., the original timeline therefor in Exhibit 3.1.1 or any extension thereto granted by Harvard in its sole discretion), Licensee shall notify Harvard promptly and will have an additional [**] days to achieve such milestone. If Licensee does not achieve the Xeno-Transplantation Milestone within such [**] days, then Harvard may by written notice exclude Xeno-Transplantation from the Field and the licenses granted herein. Notwithstanding anything express or implied, not meeting the then-applicable deadline for the Xeno-Transplantation Milestone shall in any event not be deemed a breach of this Agreement and shall not give rise to a right for Harvard to terminate this Agreement.

3.7 Activities of Others. Licensee may satisfy its obligations under Sections 3.1 through 3.6 by the actions of itself, its Affiliates, or its Sublicensees, or by the actions of any combination of the foregoing.

4. Consideration for Grant of License.

4.1 Equity.

4.1.1 Initial Issuance. In accordance with the terms of the Subscription Agreement, Licensee shall, on the Effective Date and concurrent with the execution of this Agreement, as partial consideration for the licenses granted hereunder, issue to Harvard 454,545 shares of Licensee's common stock, representing [**] percent ([**]%) of Licensee's outstanding capital stock on a Lully-Diluted Basis as of the date of such issuance and after giving effect to such issuance (the "**Shares**"). Harvard hereby agrees that, as a condition to and effective as of the issuance of the Shares, Harvard will execute a joinder to that certain Right of first Refusal and Co-Sale Agreement, by and among the Licensee and the stockholders set forth therein, dated on or about the date hereof, and that certain Voting Agreement, by and among the Licensee and the stockholders set forth therein, dated on or about the date hereof, as a common stockholder of Licensee.

4.1.2 Anti-Dilution Issuances. If, at any time, prior to the achievement of the Financing Threshold, Licensee issues Additional Securities that would cause the Shares to represent less than [**] of Licensee's outstanding capital stock on a Fully-Diluted Basis (excluding Exempted Issuances), Licensee shall immediately issue to Harvard, for no additional consideration, such additional number of shares of common stock of Licensee (the "**Anti-Dilution Shares**") such that the Shares plus the Anti-Dilution Shares (including any Anti-Dilution Shares previously issued to Harvard pursuant to this Section 4.1.2, and any Shares or Anti-Dilution Shares transferred by Harvard to a third party or held by an Affiliate of Harvard) would then represent in the aggregate [**] of Licensee's outstanding capital stock on a Fully-Diluted Basis (excluding Exempted Issuances), as calculated after giving effect to the anti-dilutive issuance up to the Financing Threshold, but not any issuances in consideration for investment amounts in excess of the Financing Threshold; provided however, that to the extent such Additional Securities are issued pursuant to an equity incentive plan, Licensee shall issue the Anti-Dilution Shares upon the earlier of (a) the end of Licensee's fiscal year in which the issuances took place and (b) the closing of the next preferred stock financing, in each case, calculated as of the date contemplated by (a) or (b), as applicable. Licensee shall provide Harvard with evidence of the issuance of such Anti-Dilution Shares promptly after their issuance. Such issuances shall continue only up to, and until such time as Licensee has achieved, the Financing Threshold. Thereafter, no additional shares shall be due to Harvard pursuant to this Section 4.1.2. The Anti-Dilution Shares will be subject to the same restrictions as the Shares in accordance with the terms of the Subscription Agreement.

4.1.3 Preemptive Rights. Harvard shall have, pursuant to the Subscription Agreement, the right to purchase from Licensee in offerings of equity securities by Licensee (excluding (a) Exempted Issuances, (b) shares of common stock issued or issuable, and options, warrants or other rights to purchase Common Stock issued or issuable to Licensee's employees, consultants, officers, directors, or advisors as part of an incentive compensation arrangement or to Licensee's former employees, consultants, officers, directors, or advisors as part of a settlement of any dispute regarding incentive compensation arrangements and (c) shares of Common Stock issued or issuable to banks, equipment lessors, real property lessors, financial institutions or other persons engaged in the business of making loans pursuant to a debt financing, commercial leasing or real property leasing transaction; shares of Common Stock issued or issuable in connection with any settlement of any action, suit, proceeding or litigation)

after the Financing Threshold has been achieved that portion of such equity securities as equals the proportion that the common stock then held by Harvard (including all shares of common stock then issuable upon conversion and/or exercise, as applicable, of preferred stock and any other equity securities then held by Harvard) bears to the total common stock of Licensee then outstanding on a Fully-Diluted Basis. The foregoing right shall be subject to the terms, conditions and exceptions as are contained in the Subscription Agreement, which terms, conditions and exceptions shall be no less favorable to Harvard than the terms, conditions and exceptions offered to the holders of preferred stock holding similar rights, unless otherwise provided in this Section 4.1.3. The Subscription Agreement shall provide that during the period prior to any Change of Control of Licensee or any Initial Public Offering, Harvard may not sell or otherwise transfer the shares acquired by Harvard upon exercise of the foregoing right without the consent of Licensee to any third party other than Osage or a holder of the preferred stock of Licensee. The Subscription Agreement shall provide that during the period prior to any Change of Control of Licensee or any Initial Public Offering, Harvard may sell or otherwise transfer the shares acquired by Harvard upon exercise of the foregoing right without the consent of Licensee to any third party other than Osage or a holder of the preferred stock of Licensee; provided, in each such case, that Harvard notifies Licensee in writing, and the transferee agrees and consents to be bound in writing by the transaction agreements pursuant to which such securities were originally acquired. The Subscription Agreement shall provide that Harvard may not assign the foregoing right without the consent of Licensee to any third party other than Osage or a holder of the preferred stock of Licensee. The Subscription Agreement shall provide that Harvard may assign the foregoing right without the consent of Licensee to any third party other than Osage or a holder of the preferred stock of Licensee; provided, that, in each such case, Harvard notifies Licensee in writing in connection with the transfer of such rights. With regard to assignment of the foregoing right to Osage or a holder of the preferred stock of Licensee, the Subscription Agreement shall provide that Harvard may assign the foregoing right in whole or in part and in any one or more instances.

4.1.4 Representations and Warranties. Licensee represents and warrants to Harvard that, upon issuance of the Shares, and upon issuance of any Anti-Dilution Shares:

4.1.4.1 the capitalization table as provided by Licensee (the "**Cap Table**") upon issuance of the Shares or the Anti-Dilution Shares, as the case may be, sets forth all of the capital stock of Licensee on a Fully-Diluted Basis as of the date of issuance of the Shares or the Anti-Dilution Shares, on a pro forma basis as of immediately subsequent to the issuance of the Shares or the Anti-Dilution Shares, as applicable;

4.1.4.2 other than as set forth in the Cap Table, as of the date of issuance of the Shares or Anti-Dilution Shares, as applicable, there are no outstanding shares of capital stock, convertible securities, outstanding warrants, options or other rights to subscribe for, purchase or acquire from Licensee any capital stock of Licensee and there are no contracts or binding commitments providing for the issuance of, or the granting of rights to acquire, any capital stock of Licensee or under which Licensee is, or may become, obligated to issue any of its securities; and

4.1.4.3 the Shares or the Anti-Dilution Shares, as the case may be, when issued pursuant to the terms hereof, shall, upon such issuance, be duly authorized, validly issued, fully paid and nonassessable.

4.1.5 Information. Upon request, but no more frequently than [**], Licensee will deliver to Harvard a statement of the outstanding capital stock of Licensee on a Fully Diluted Basis in sufficient detail as to permit Harvard to calculate its percentage equity ownership in Licensee.

4.2 Annual License Maintenance Fees. Licensee shall pay Harvard annual license maintenance fees ("**Maintenance Fees**") as follows:

Calendar Year(s)	Maintenance Fee (U.S. Dollars)
2018	[**]
2019	[**]
2020 and each subsequent Calendar Year during the Term	[**]

Each such Maintenance Fee shall be due and payable on [**] of the calendar year to which such fee applies.

4.3 Milestone Payments.

4.3.1 Product Milestone Payments. Licensee shall pay Harvard the following milestone payments with respect to each of the first [**] Licensed Products to reach each milestone, regardless of whether such milestone is achieved by Licensee or any Affiliate or Sublicensee of Licensee, and subject to Section 4.3.4:

Milestone Event	Milestone Payment (U.S. Dollars)
[**]	[**]
[**]	[**]
[**]	[**]
[**]	[**]
[**]	[**]
[**]	[**]
[**]	[**]
[**]	[**]

Upon the consummation (i.e., closing) of a Change of Control of Licensee at any time during the Term, the dollar amounts set forth in the table above under "Milestone Payments (U.S. Dollars)" shall be deleted and the milestone payments set forth in the table below shall be substituted for the corresponding milestone payments for occurrences of a milestone event after the consummation of Change of Control. This shall not change the number of times that each of the milestone payments may become due — each milestone payment can become due hereunder a maximum of [**] times only, whether at the lower level of the table above or at the higher level of the table below as applicable at the time of milestone achievement. In addition, it is understood that the increased milestone amounts shall only apply on a going-forward basis from the time of a Change of Control; no increase to the amounts of the milestone payments due for milestone events achieved prior to the Change of Control shall be due.

Milestone Event	Milestone Payment (U.S. Dollars)
[**]	[**]
[**]	[**]
[**]	[**]
[**]	[**]
[**]	[**]
[**]	[**]
[**]	[**]
[**]	[**]
[**]	[**]

4.3.2 Financing Milestone Payments.

4.3.2.1 Series A Financing. Licensee shall pay to Harvard, in accordance with Section 4.3.3, upon achievement by Licensee (together with its Affiliates for purposes of this Section 4.3.2.1, including the calculation of sales by Licensee of shares of Series A Preferred Stock) of each of the financing milestone events set forth below the applicable milestone payment set forth opposite such milestone event set forth below:

Milestone Event	Milestone Payment (U.S. Dollars)
Closing of sale by Licensee, in a single transaction or series of transactions since inception, of shares of Series A Preferred Stock yielding aggregate gross proceeds to Licensee of at least five million dollars ($5,000,000)	Five Hundred Thousand Dollars ($500,000)
Closing of sale by Licensee, in a single transaction or series of transactions since inception, of shares of Series A Preferred Stock yielding aggregate gross proceeds to Licensee of at least twenty-five million dollars ($25,000,000)	Seven Hundred Fifty Thousand Dollars ($750,000)
Closing of sale by Licensee, in a single transaction or series of transactions since inception, of shares of Series A Preferred Stock yielding aggregate gross proceeds to Licensee of at least $50 million	One Million Seven Hundred Fifty Thousand Dollars ($1,750,000)

Each milestone payment set forth in table above in this Section 4.3.2.1 shall be payable only once.

If Licensee sells any equity security other than Series A Preferred Stock (excluding common stock sold to employees or consultants as part of an incentive compensation arrangement) as part of a financing transaction of Licensee prior to the sale of $50 million in Series A Preferred, the aggregate gross proceeds from such financing transaction shall be applied towards the achievement of a milestone event set forth in the table above in this Section 4.3.2.1 as if the cash proceeds were for the purchase of Series A Preferred Stock, and if any milestone event is deemed achieved as a result, then the corresponding milestone payment set forth in the table above in this Section 4.3.2.1 shall be paid to Harvard in accordance with Section 4.3.3.

If prior to the payment by Licensee of an aggregate of $3 million to Harvard pursuant to this Section 4.3.2.1, a milestone payment becomes due under this Agreement for achievement by Licensee or any Affiliate or Sublicensee of Licensee of the milestone event described in the table above in Section 4.3.1 as [**] becomes due under this Agreement, any milestone payment set forth in the table above in this Section 4.3.2.1 remaining unpaid shall be paid on the date such milestone payment or [**], as the case may be, is due.

In no event shall Licensee be required to pay more than $3 million to Harvard pursuant to this Section 4.3.2.1.

4.3.2.2 Series B Financing. Upon each closing of the sale by Licensee (together with its Affiliates for purposes of this Section 4.3.2.2, including the calculation of sales by Licensee of shares of Series B Preferred Stock) of shares of Series B Preferred Stock, Licensee shall pay Harvard a milestone payment in an amount equal to $6 million multiplied by the product of the Valuation Factor multiplied by the Proceeds Factor, until such time as the aggregate payments under this Section 4.3.2.2 total $6 million.

If prior to the payment by Licensee of an aggregate of $6 million to Harvard pursuant to this Section 4.3.2.2, a milestone payment becomes due under this Agreement for achievement by Licensee or any Affiliate or Sublicensee of Licensee of the milestone event described in the table above in Section 4.3.1 as "FSFD in Phase 3 Clinical Study" or a Win-State Payment becomes due under this Agreement, the unpaid balance of such $6 million shall be paid to Harvard on the date such milestone payment or Win-State Payment, as the case may be, is due.

In no event shall Licensee be required to pay more than $6 million to Harvard pursuant to this Section 4.3.2.2.

4.3.3 Licensee shall notify Harvard in writing within [**] days following the achievement of each milestone described in Section 4.3.1 or 4.3.2, and shall make the appropriate milestone payment within [**] days after the achievement of such milestone.

4.3.4 The milestone payments set forth in Section 4.3.1 shall not be payable:

(a) with respect to a subsequent achievement of the same milestone event by a Licensed Product that is a replacement for another Licensed Product the development of which has been discontinued after achievement of such same milestone event;

(b) with respect to a subsequent achievement of the same milestone event by any back-up Licensed Product that is a Related Product to a first Licensed Product that has already achieved such same milestone event; and

(c) with respect to a subsequent achievement of the same milestone event by a Licensed Product that differs from a first Licensed Product that has achieved such same milestone event only by virtue of such subsequent Licensed Product's being a different dosage strength or formulation of or using a different delivery system than such first Licensed Product.

4.3.5 The milestones set forth in Section 4.3.1 are intended to be successive. If a Licensed Product is not required to undergo the event associated with a particular milestone for a given Licensed Product ("**Skipped Milestone**"), such Skipped Milestone will be deemed to have been achieved upon the achievement by such Licensed Product of the next successive milestone ("**Achieved Milestone**"). Payment for any Skipped Milestone that is owed in accordance with the provisions of Section 4.3.1 shall be due within [**] days after the Licensee learned of the achievement of the Achieved Milestone. For clarity, Regulatory Approval in a

jurisdiction shall not trigger payment of another Regulatory Approval milestone not yet achieved (for example, First Regulatory Approval in the EU shall not trigger a payment obligation for First Regulatory Approval in the United States as a Skipped Milestone and *vice versa*, and First Regulatory Approval in Japan shall not trigger a payment obligation for First Regulatory Approval in the United States or Europe, nor *vice versa*).

4.4 Royalty on Net Sales.

4.4.1 Rate. Licensee shall pay Harvard an amount equal to [**] percent ([**]%) of Net Sales of Licensed Products, calculated in accordance with and subject to the remainder of this Section 4.4.

4.4.2 Royalty Term. On a country-by-country basis, in each country in which a Licensed Product is Covered by a Valid Claim, royalties shall be paid on the sum of Net Sales of such Licensed Product until the latest of: (a) the expiration date of the last to expire Valid Claim within the Patent Rights Covering the applicable Licensed Product (or if the last Covering Valid Claim with respect to such Licensed Product in such country is a pending Valid Claim, the date such pending Valid Claim ceases to be a Valid Claim; provided, however, that subsequent issuance of such Valid Claim shall again extend the Royalty Term from the date of such issuance to the expiration date of such Valid Claim); (b) the period of regulatory exclusivity associated with such Licensed Product in such country; or (c) [**] years after the First Commercial Sale of such Licensed Product in such country but only for so long as such Licensed Product is sold (the "**Royalty Term**"). During time periods when the Royalty Term is only in effect in a given country for a given Licensed Product due to clause (c) of the foregoing sentence, then the royalty rate provided for such Licensed Product in such country shall be reduced by [**] percent ([**]%) from that set forth in Section 4.4.1 above for such portions of the Royalty Term for such Licensed Product in such country.

4.4.3 Third Party Royalty Set-Off. If Licensee obtains a license from a third party after arm's length negotiations to patent application(s) and/or patent(s) that Licensee believes in good faith Cover a Licensed Product, then Licensee may offset [**] percent ([**]%) of any royalty payments due under such third-party license with respect to such patent application(s) and/or patent(s) with respect to sales of Licensed Products against the royalty payments that are due to Harvard with respect to Net Sales of such Licensed Products in such country; provided that in no event shall (a) the royalty payments to Harvard with respect to such Licensed Products be reduced by more than [**] percent ([**]%) of the amount otherwise due, (b) with respect to royalties paid to the third party solely on the basis of claims of pending patent applications of the third party (and no issued patent claim of the third party covers the applicable Licensed Product), such amounts shall only be offsettable in accordance with the foregoing in this Section 4.4.3 if the Covering pending claim of the third party's pending application would meet the definition of Valid Claim set forth in this Agreement were such pending claim within the Patent Rights as of the Effective Date, and (c) the royalty offset provided in this Section 4.4.3 may be applied to any combination product for which an adjustment to Net Sales has been made in accordance with Section 4.4.5, but to avoid doubt only as relates to royalties on patent applications and patents that would apply in the absence of the Other Active Components (third party patent royalties due solely because of the presence of the Other Active Components shall not be offsettable against adjusted Net Sales of a Combination Product).

4.4.4 Loss of Market Exclusivity. If a Loss of Market Exclusivity exists in a country with respect to a Licensed Product, then the royalty rate for such Product in such country shall be reduced by [**] percent ([**]%) of the applicable rate determined pursuant to Section 4.4.1 and 4.4.2, provided that in no event shall the effective royalty rate applied to Net Sales of such Licensed Product in such country be reduced as a result of the application of the terms of this Section 4.4.4 and Section 4.4.3 to less than fifty percent ([**]%) of the applicable rate determined pursuant to Section 4.4.1 and 4.4.2. Once Loss of Market Exclusivity exists with respect to a Licensed Product in a country, it will be deemed to continue to exist thereafter with respect to such Licensed Product in such country unless Harvard requests in writing that Loss of Market Exclusivity with respect to a Licensed Product in a country be re-evaluated (which request may not be made more frequently than [**] in a Calendar Year), in which case the existence of such Loss of Market Exclusivity, and any corresponding reduction pursuant to this Section 4.4.4, shall depend on whether the criteria set forth in the definition of Loss of Market Exclusivity are still met with respect to such Licensed Product in such country. If it is determined that the Loss of Market Exclusivity no longer exists, the termination of the [**] percent ([**]%) reduction in royalty rate due to the absence of Loss of Market Exclusivity shall be effective only on a going-forward basis from the date of such Harvard request, and there shall be no recovery of monies or retroactive increase in rates for time periods prior thereto.

4.4.5 Combination Products. If a Licensed Product is sold as part of a combination product with other active pharmaceutical ingredient(s) (or active biologic(s)) that are not Licensed Products and perform a function distinct from the Licensed Product component of the combination ("**Other Active Component(s**)"), then Net Sales of the combination product shall be adjusted prior to calculation of the royalty to Harvard hereunder, by multiplying total Net Sales of the combination product by the fraction, A/A+B, where A is the [**] and B is the [**], in each case during the applicable royalty reporting period or, if sales of both the Licensed Product and the Other Active Component(s) did not occur in such period, then in the most recent royalty reporting period in which sales of both occurred. In the event that such average sale price cannot be determined for both the Licensed Product and Other Active Component(s) included in such combination product, the Parties shall determine any adjustment to Net Sales of the Licensed Product by virtue of its being sold as part of a combination product with Other Active Components in such country by mutual agreement based on the relative contribution of value of the Licensed Product and the Other Active Component(s) in the combination product. If the Parties do not reach written agreement as to such allocation within [**] days, then the matter shall be decided by arbitration in accordance with Exhibit 4.4.5. To avoid doubt, the royalty offset provided in Section 4.4.3 does not allow for the offset of royalties on third party patent applications and patents that are necessary only for the Other Active Component(s), and would not apply to the Licensed Product component as a single agent.

4.5 Patent Challenge.

4.5.1 If Licensee, its Affiliate or a Sublicensee ("**Challenging Party**") takes any action that constitutes a Patent Challenge, then (a) in the case of the Licensee or its Affiliate as the Challenging Party, the fees, milestones, royalties and other amounts payable to Harvard under Sections 4.2, 4.3, and 4.4 will be [**] with respect to any payments that become due and Net Sales of Licensed Products that are sold during the pendency of such Patent Challenge, (b) in the case of a Sublicensee as the Challenging Party, if (i) Licensee (A) diligently sought to enforce and continues to diligently seek to enforce to the extent possible (unless reputable intellectual property counsel to Licensee advises Licensee that such enforcement or seeking to enforce is contrary to applicable law or is unenforceable against such Sublicensee), its right to terminate the Sublicense agreements with such Sublicensee, including by, at minimum, taking all required steps to seek to terminate such Sublicense agreements in accordance with the terms thereof and contesting any contrary claim by the Sublicensee or (B) does not take such enforcement action upon the advice of reputable intellectual property counsel to Licensee that such enforcement or seeking to enforce is contrary to applicable law or is unenforceable against such Sublicensee, then in each case under clause (A) and (B) the milestone payments under Section 4.3 with respect to Licensed Products achieved by such Sublicensee that become due during the pendency of such Patent Challenge will be [**] and royalties payable to Harvard under Section 4.4 with respect to Net Sales by such Sublicensee of Licensed Products that are sold during the pendency of such Patent Challenge will be [**], and if (ii) Licensee did not diligently seek to enforce and does not continue to diligently seek to enforce to the extent possible (unless such inaction is upon the advice of reputable intellectual property counsel to Licensee that such enforcement or seeking to enforce is contrary to applicable law or is unenforceable against such Sublicensee), its right to terminate the Sublicense agreements with such Sublicensee, including by, at minimum, taking all required steps to seek to terminate such Sublicense agreements in accordance with the terms thereof and contesting any contrary claim by the Sublicensee, the fees, milestones, royalties and other amounts payable to Harvard under Sections 4.2, 4.3, and 4.4 will be [**] with respect to any payments that become due and Net Sales of Licensed Products that are sold during the pendency of such Patent Challenge. If the outcome of such Patent Challenge is a determination against the Challenging Party, (1) (A) in the case of a Patent Challenge subject to clause (a) above, the fees, milestones, royalties and other amounts payable to Harvard under Sections 4.2, 4.3, and 4.4 shall remain at such [**] rate, (B) in the case of a Patent Challenge subject to clause (b)(1) above, only the milestones and royalties payable to Harvard under Sections 4.3 and 4.4 related to the challenging Sublicensee's milestone achievements and Net Sales shall remain at such [**] rate, and (C) in the case of a Patent Challenge subject to clause (b)(ii) above all the fees, milestones, royalties and other amounts payable to Harvard under Sections 4.2, 4.3, and 4.4 shall remain at such [**] rate, and (2) Licensee shall reimburse Harvard [**] the amount of all reasonable expenses incurred by Harvard (including reasonable attorneys' fees) in connection with such Patent Challenge. If the outcome of such Patent Challenge is a determination in favor of the Challenging Party, Licensee will have no right, nor will any Affiliate or Sublicensee have any right, to recoup any royalties or other amounts paid before or during the pendency of such Patent Challenge. The Parties agree that any Patent Challenge by Licensee, or any of its Affiliates or Sublicensees, may be detrimental to Harvard, and that the foregoing provisions shall constitute reasonable liquidated damages to reasonably compensate Harvard for any loss it may incur as a result of Licensee, or any of its Affiliates' or Sublicensees', taking such action.

4.5.2 Licensee shall include in each agreement for a Sublicense a clause equivalent with respect to the Sublicensee to the provisions found in the foregoing Section 4.5.1 (adjusted for party names, section references, and the like) and shall make Harvard an explicit third party beneficiary thereof.

4.5.3 Notwithstanding Section 4.5.1(b)(ii) and Section 4.5.1(1)(A), if the Challenging Party that takes an action that constitutes a Patent Challenge is a Sublicensee rather than Licensee or an Affiliate, then, the adjustment to the royalty rate under Section 4.4 of this Agreement with respect to Net Sales by Sublicensees of Licensed Products shall apply only to the calculation of royalties on Net Sales by such challenging Sublicensee, and the adjustment to the milestone payments under Section 4.3 with respect to Licensed Products achieved by Sublicensees shall apply only to the milestone payments with respect to Licensed Products achieved by such challenging Sublicensee. Licensee will make Harvard an explicit intended third-party beneficiary of the obligation in the Sublicense agreement for the Sublicensee to pay Harvard [**] the amount of all expenses incurred by Harvard (including reasonable attorneys' fees) in connection with such Patent Challenge, and will reasonably assert its rights under the Sublicense for such [**] payments to be made, and reasonably cooperate with Harvard if Harvard takes enforcement actions of its own as to such right to [**] payment.

To avoid doubt, royalties on Net Sales by Licensee and its Affiliates and Sublicensees who are not Challenging Parties shall not be [**] under Section 4.5.1(b) as a result of the Patent Challenge actions of an unrelated Sublicensee Challenging Party.

4.6 Non-Royalty Sublicense Income. Licensee will pay Harvard a percentage in accordance with the following table of all Non-Royalty Sublicense Income, without deduction (other than as provided in the definition of Non-Royalty Sublicense Income in Section 1.65) or apportionment of any kind; provided, however, that Licensee may deduct from Non-Royalty Sublicense Income received by Licensee as a result of the achievement by a Sublicensee of a milestone event set forth in Section 4.3.1 the amount of the corresponding milestone payment due Harvard under Section 4.3.1 in connection with the achievement of such milestone event.

Category of Sublicense	*Percentage of Non-Royalty Sublicense Income*
(a) With respect to a Sublicense executed [**]	[**]
(b) With respect to a Sub license executed [**]	[**]
(c) With respect to a Sublicense executed [**]	[**]

Subject to Section 1.65, in the case of Non-Royalty Sublicense Income received in kind in the form of a freely transferable security (except for such restrictions on transfer imposed by applicable law), Licensee may distribute such in-kind Non-Royalty Sublicense Income to Harvard in the same form in which received by the Licensee.

4.7 Success Payments. Licensee shall make such payments (each, a "**Win-State Payment**" and collectively, the "**Win-State Payments**") as are determined in accordance with Exhibit 4.7 hereto. Any acquirer, lessee, exclusive licensee or other transferee of all or substantially all of the Licensee's assets, or any successor entity to the Licensee (each, an "**Acquirer**"), shall be obligated to assume the Licensee's obligations pursuant to this Section 4.7 and Exhibit 4.7 hereto, as such obligations are set forth herein and therein and subject to the terms and conditions (including contingent events) set forth herein and therein.

5. Reports; Payments; Records.

5.1 Reports and Payments.

5.1.1 Reports. Within [**] days after the conclusion of each Calendar Quarter commencing with the first Calendar Quarter in which Net Sales are generated or Non-Royalty Sublicense Income is received, Licensee shall deliver to Harvard a report containing the following information (in each instance, with a Licensed Product-by-Licensed Product and country-by-country breakdown):

5.1.1.1 the number of units of Licensed Products sold, leased or otherwise transferred by Invoicing Entities for the applicable Calendar Quarter;

5.1.1.2 the gross amount billed or invoiced for Licensed Products sold, leased or otherwise transferred by Invoicing Entities during the applicable Calendar Quarter;

5.1.1.3 a calculation of Net Sales for the applicable Calendar Quarter, including an itemized listing of allowable deductions;

5.1.1.4 a detailed accounting of all Non-Royalty Sublicense Income received during the applicable Calendar Quarter;

5.1.1.5 the total amount payable to Harvard in U.S. Dollars on Net Sales and Non-Royalty Sublicense Income for the applicable Calendar Quarter, together with the exchange rates used for conversion; and

5.1.1.6 a good faith list of [**] for all Patent Rights that have Valid Claims covering the Licensed Products.

Each such report shall be certified on behalf of Licensee as true, correct and complete in all material respects. If no amounts are due to Harvard for a particular Calendar Quarter, the report shall so state.

5.1.2 Payment. Within [**] days after the end of each Calendar Quarter, Licensee shall pay Harvard all amounts due with respect to Net Sales and Non-Royalty Sublicense Income for the applicable Calendar Quarter; provided, however, that for royalties to Harvard on Net Sales by Sublicensees, Licensee shall have until the earlier of (a) [**] business days after receiving the quarterly royalty payment from the Sublicensee and (b) [**] days after the end of the applicable Calendar Quarter to turn around payment to Harvard on the underlying Net Sales.

5.2 Payment Currency. All payments due under this Agreement will be paid in U.S. Dollars. Conversion of foreign currency to U.S. Dollars will be made at the conversion rate existing in the United States (as reported in the Wall Street Journal) on the last working day of the applicable Calendar Quarter. Such payments will be without deduction of exchange, collection or other charges. Notwithstanding the foregoing, a reasonable and customary currency conversion methodology as is set forth in a Sublicense agreement shall be the method used for currency conversion of amounts due in relation to such Sublicense agreement.

5.3 Records. Licensee shall maintain, and shall cause its Affiliates and Sublicensees to maintain, complete and accurate records of Licensed Products that are made, used, sold, leased or transferred under this Agreement, any amounts payable to Harvard in relation to such Licensed Products, and all Non-Royalty Sublicense Income received by Licensee and its Affiliates, which records shall contain sufficient information to permit Harvard to confirm the accuracy of any reports or notifications delivered to Harvard under Section 5.1. Licensee, its Affiliates and/or its Sublicensees, as applicable, shall retain such records relating to a given Calendar Quarter for at least [**] years after the conclusion of that Calendar Quarter, during which time Harvard will have the right, at its expense, to cause an independent, certified public accountant (or, in the event of a non-financial audit, other appropriate auditor) to inspect such records during normal business hours for the purposes of verifying the accuracy of any reports and payments delivered under this Agreement and Licensee's compliance with the terms hereof. Such accountant or other auditor, as applicable, shall be under reasonable written obligations of confidentiality to the audited party and shall not disclose to Harvard any information other than information relating to the accuracy of reports and payments delivered under this Agreement. In addition, the auditor shall disclose its draft conclusions to Licensee and Harvard, and the basis for such conclusions to Licensee, prior to making its final report to Harvard, and shall reasonably consider the Licensee's comments in response thereto (if any). The accounting records as to any accounting period shall not be audited more than [**], nor more than [**] years after the end of such accounting period. The parties shall reconcile any underpayment or overpayment within [**] days after the accountant delivers the results of the audit. If any audit performed under this Section 5.3 reveals an underpayment in excess of [**] percent ([**]%) in any calendar year, Licensee shall reimburse Harvard for all amounts incurred in connection with such audit. Harvard may exercise its rights under this Section 5.3 only [**] every year per audited entity and only with reasonable prior notice to the audited entity. Notwithstanding the foregoing, provided that the Licensee obtains an [**] audit right for itself with respect to a Sublicensee's records, as well as the right to share the results of such audit with Harvard, the Licensee shall not be required to obtain from such Sublicensee a direct audit right for Harvard. In such event, in any calendar year in which Licensee would not otherwise exercise its right to audit a given Sublicensee, if requested by Harvard in writing, Licensee shall exercise such audit right, which shall be at Harvard's expense unless the audit reveals an underpayment (either by the Sublicensee alone or when taken together with all other contemporaneous audits conducted by or at the request of Harvard) in excess of [**] percent ([**]%) in any calendar year that is the subject of the audit, in which case such audit shall be at Licensee's expense.

5.4 Late Payments. Any payments by Licensee that are not paid on or before the date such payments are due under this Agreement will bear interest at the lower of (a) [**] percent ([**]%) per month and (b) the maximum rate allowed by law. Interest will accrue beginning on the first day following the due date for payment and will be compounded [**]. Payment of such interest by Licensee shall not limit, in any way, Harvard's right to exercise any other remedies Harvard may have as a consequence of any payment due but unpaid hereunder.

5.5 Payment Method. Each payment due to Harvard under this Agreement shall be paid by check or wire transfer of funds to Harvard's account in accordance with written instructions provided by Harvard. If made by wire transfer, such payments shall be marked so as to refer to this Agreement.

5.6 Withholding and Similar Taxes. All amounts to be paid to Harvard pursuant to this Agreement shall be without deduction of exchange, collection, or other charges, and, specifically, without deduction of withholding or similar taxes or other government imposed fees or taxes, except as permitted in the definition of Net Sales; provided that Licensee shall be entitled to make payment to an account of Harvard held in the United States.

6. Patent Filing, Prosecution and Maintenance.

6.1 Control. Harvard will be responsible for the preparation, filing, prosecution, protection, defense and maintenance of all Patent Rights, using independent patent counsel reasonably acceptable to Licensee, and including oppositions, *inter partes* reviews and post-grant reviews. Harvard will: (a) instruct such patent counsel to furnish the Licensee with copies of all correspondence relating to the Patent Rights from the United States Patent and Trademark Office (USPTO) and any other patent office, as well as copies of all proposed responses to such correspondence in time for Licensee to review and comment on such response; (b) give Licensee an opportunity to review the text of each patent application before filing; (c) consult with Licensee with respect thereto; (d) supply Licensee with a copy of the application as filed, together with notice of its filing date and serial number; and (e) keep Licensee advised of the status of actual and prospective patent filings. Harvard shall give Licensee the opportunity to provide comments on and make requests of Harvard concerning the preparation, filing, prosecution, protection, defense and maintenance of the Patent Rights, and shall seriously consider such comments and requests (including any comment or request that Harvard refrain from filing a continuation-in-part application or that Harvard file a Patent Right divisional or similar filing that is specific to the Field); [**]. In particular, and without intending to limit any of Harvard's rights pursuant to this Agreement, Harvard expressly reserves the right to decline Licensee's request to file, prosecute, maintain or defend any of the Patent Rights in any Developing Country(ies) unless (i) Licensee demonstrates to Harvard's reasonable satisfaction that the filing, prosecution, maintenance or defense of such Patent Rights in such Developing Country(ies) would materially increase the locally-affordable availability of Licensed Products or equivalents thereof (*e.g.*, generic products) in those and/or other Developing Country(ies) and (ii) the provisions of Article 7 notwithstanding, Licensee agrees that Harvard shall hold final decision-making authority, on a case-by-case basis, as to whether Licensee will be permitted to enforce such Patent Rights in such Developing Country(ies).

6.2 Expenses. Subject to Section 7.3 below, Licensee shall reimburse Harvard for [**] documented, out-of-pocket expenses incurred by Harvard pursuant to this Article 6, within [**] days after the date of each invoice from Harvard for such expenses. [**]. In the event that after the Effective Date, Harvard enters into a license with a third party with respect to any of the Base Editor Patent Rights outside the Field or Supporting Technology Patent Rights in or outside the Field, then Harvard shall use reasonable efforts to secure a provision under such license that provides for payment of an appropriate portion of past and future expenses related to such Patent Rights by such licensee at the time such expenses are incurred, taking into consideration the scope and type (i.e., exclusive or non-exclusive) of such license. In the event that Harvard is able to collect such amounts, Harvard shall reimburse Licensee for a pro rata share of such expenses already paid by Licensee.

6.3 Abandonment. If Licensee decides that it does not wish to pay for the preparation, filing, prosecution, protection or maintenance of any Patent Rights in a particular country, then Licensee shall provide Harvard with prompt written notice of such election and upon such written notice, the Patent Rights that were the subject of the notice, solely in the countries identified in the notice for such Patent Rights, shall be "**Abandoned Patent Rights**". Upon receipt of such notice by Harvard, Licensee shall be released from its obligation to reimburse Harvard for the expenses incurred thereafter as to such Abandoned Patent Rights; provided, however, that expenses authorized prior to the receipt by Harvard of such notice that cannot be cancelled as of the date of the notice shall be deemed incurred prior to the notice. Any license granted by Harvard to Licensee hereunder with respect to any Abandoned Patent Rights will terminate, and Licensee will have no rights whatsoever to exploit such Abandoned Patent Rights. Harvard will then be free, without further notice or obligation to Licensee, to grant rights in and to such Abandoned Patent Rights to third parties. In addition, Harvard shall have the right to grant to third party licensees of any Abandoned Patent Rights that are Disease-Specific Patent Rights and with advance written notice to the Licensee, a non-exclusive license under the Patent Rights other than such Disease-Specific Patent Rights solely to make, have made, offer for sale, sell, have sold and import such [**] Proposed Product Covered (as of the date of the applicable notice from Licensee of its election not to pay patent expenses with respect to such Abandoned Patent Rights) by such Abandoned Patent Rights for the prevention or treatment of the applicable human disease solely in the countries applicable to such Abandoned Patent Rights and not including any indications or applications not Covered (as of the date of the applicable notice from Licensee of its election not to pay patent expenses with respect to such Abandoned Patent Rights) by such Abandoned Patent Rights in such country. In addition, if Abandoned Patent Rights represent substantially all the material patentable claims within a Subcategory of Base Editor Patent Rights, Harvard shall have the right to grant to third party licensees of such Abandoned Patent Rights within such Subcategory of Base Editor Patent Rights, a non-exclusive license under the Patent Rights solely to make, have made, offer for sale, sell, have sold and import products, including Base Editor Products, that are claimed or covered by Patent Rights within such Subcategory of Base Editor Patent Rights in any field solely in the countries

applicable to such Abandoned Patent Rights, which non-exclusive license shall not extend to components of such products that are a different category of Base Editor than the category of Base Editor that is the subject matter of such Abandoned Patent Rights (for non-limiting example, [**]). For clarity, Abandoned Patent Rights are defined on a country-by-country basis, not a worldwide basis, and Licensee shall retain its rights in all other countries to the Patent Rights that are counterparts in other countries to the Abandoned Patent Rights (and the non-exclusive licenses referred to in this paragraph shall not extend to such other countries).

6.4 Marking. Licensee shall, and shall cause its Affiliates and Sublicensees to, mark all Licensed Products sold or otherwise disposed of in such a manner as to conform with the patent laws and practice of the country to which such products are shipped or in which such products are sold for purposes of ensuring maximum enforceability of Patent Rights in such country.

7. Enforcement of Patent Rights.

7.1 Notice. In the event either party becomes aware of any possible or actual infringement of any Patent Rights with respect to Licensed Products in the Field (an "Infringement"), that party shall promptly notify the other party and provide it with details regarding such Infringement.

7.2 Suit by Licensee. Licensee shall have the first right, but not the obligation, to take action in the prosecution, prevention, or termination of any Infringement. Before Licensee commences an action with respect to any Infringement, Licensee shall consider in good faith the views of Harvard and potential effects on the public interest in making its decision whether to sue. Should Licensee elect to bring suit against an infringer, Licensee shall keep Harvard reasonably informed of the progress of the action and shall give Harvard a reasonable opportunity in advance to consult with Licensee and offer its views about major decisions affecting the litigation. Licensee shall give careful consideration to those views, but shall have the right to control the action; provided, however, that if Licensee fails to defend in good faith the validity and/or enforceability of the Patent Rights in the action, or if Licensee's license to a Valid Claim in the suit terminates, Harvard may elect to take control of the action pursuant to Section 7.3. Any and all expenses, including reasonable attorneys' fees, incurred by Harvard under this Section 1.2 with respect to the prosecution, adjudication and/or settlement of such suit, including any related appeals, shall be paid for entirely by Licensee and Licensee shall hold Harvard free, clear and harmless from and against any and all such expenses. The expenses of such suit or suits that Licensee elects to bring under this Section 7.2, including any expenses of Harvard incurred in conjunction with the prosecution of such suits or the settlement thereof by Licensee under this Section 7.2, shall be paid for entirely by Licensee and Licensee shall hold Harvard free, clear and harmless from and against any and all costs of such litigation, including reasonable attorneys' fees (to avoid doubt, excluding costs of any suit that becomes a suit by Harvard under Section 7.3 as provided for above). Licensee shall not compromise or settle litigation under this Section without the prior written consent of Harvard, which consent shall not be unreasonably withheld or delayed. In the event Licensee exercises its right to sue pursuant to this Section 7.2, it shall first reimburse itself out of any sums recovered in such suit or in

settlement thereof for all costs and expenses of every kind and character, including reasonable attorneys' fees, necessarily incurred in the prosecution of any such suit. If, after such reimbursement, any funds shall remain from said recovery, then Harvard shall receive an amount of such remaining funds equal to the applicable percentage in Section 4.6 had the infringer been a Sublicensee instead (and such recovery was Non-Royalty Sublicense Income paid under a Sublicense executed on the effective date of the settlement or the date of entry of judgment by the court awarding such recovered sums, whichever is applicable), and the remainder of such funds shall be retained by Licensee.

7.3 Suit by Harvard. If Licensee does not take action in the prosecution, prevention, or termination of any Infringement pursuant to Section 7.2 above, and has not commenced negotiations with the infringer for the discontinuance of said Infringement, within [**] days after receipt of notice to Licensee by Harvard of the existence of an actual Infringement, then Harvard may elect to do so. Should Harvard elect to bring suit against an infringer and Licensee is joined as party plaintiff in any such suit, Licensee shall have the right to approve the counsel selected by Harvard to represent Harvard and Licensee, such approval not to be unreasonably withheld. Any and all expenses, including reasonable attorneys' fees, incurred by Licensee with respect to the prosecution, adjudication and/or settlement of such suit, including any related appeals, shall be paid for entirely by Harvard and Harvard shall hold Licensee free, clear and harmless from and against any and all such expenses. Harvard shall not compromise or settle such litigation without the prior written consent of Licensee, which consent shall not be unreasonably withheld or delayed; provided, however, that Licensee shall retain the sole authority to grant Sublicenses in its discretion. In the event Harvard exercises its right to sue pursuant to this Section 7.3, it shall first reimburse itself out of any sums recovered in such suit or in settlement thereof for all costs and expenses of every kind and character, including reasonable attorneys' fees, necessarily incurred in the prosecution of any such suit. If, after such reimbursement, any funds shall remain from said recovery, then Harvard shall retain an amount of such funds equal to [**] the applicable percentage in Section 4.6 had the infringer been a Sublicensee instead (and such recovery was Non-Royalty Sublicense Income paid under a Sublicense executed on the effective date of the settlement or the date of entry of judgment by the court awarding such recovered sums, whichever is applicable), and the remainder of such funds, if any, shall be paid to Licensee.

7.4 Own Counsel. Each party shall always have the right to be represented by counsel of its own selection and at its own expense in any suit instituted under this Article 7 by the other party for Infringement.

7.5 Cooperation. Each party agrees to cooperate fully in any action under this Article 7 that is controlled by the other party, provided that the controlling party reimburses the cooperating party promptly for any costs and expenses incurred by the cooperating party in connection with providing such assistance. This includes the obligation to be named as a party plaintiff or to join as a necessary or indispensable party in the other party's permitted suits under Section 7.2 or 7.3, if needed for standing or otherwise necessary to pursue the suit.

7.6 Declaratory Judgment. If a declaratory judgment action is brought naming Licensee and/or any of its Affiliates or Sublicensees as a defendant and alleging invalidity or unenforceability of any claims within the Patent Rights, Licensee shall promptly notify Harvard in writing. Similarly, if Harvard is named as a defendant in a declaratory judgment action related to the Patent Rights, Harvard shall promptly notify Licensee in writing. In either case, Harvard may elect, upon written notice to Licensee (such written notice to be given within [**] days after Harvard receives notice of the commencement of such action, in the case of actions of which Licensee notifies Harvard) to conduct or to take over the sole defense of the invalidity and/or unenforceability aspect of the action at its own expense. In such event, Harvard shall keep Licensee fully informed in advance of the strategy in responding to such declaratory judgment action, the parties shall enter into a common interest/joint defense agreement as appropriate (which shall not be in conflict with this Agreement), and Harvard shall reasonably consult with and consider the comments of Licensee and its counsel, and Harvard shall hold Licensee free, clear and harmless from and against any and all such expenses. If Harvard does not promptly elect to conduct the defense or take over the defense of the applicable suit (or portion thereof), then the Licensee shall have the right to conduct the defense at Licensee's expense, and Harvard shall reasonably cooperate with Licensee in relation thereto.

7.7 Actions Against Infringement Outside the Field. Prior to taking action to enforce any Patent Rights against infringement outside the Field, Harvard shall, to the extent feasible and consistent with any obligations of confidentiality that apply to Harvard, give the Licensee no less than [**] days advance written notice. Promptly after such notice, if requested by the Licensee, Harvard shall meet and confer with Licensee, subject to any obligations of confidentiality that apply to Harvard, and consider Licensee's concerns (if any) related to the potential enforcement action. In addition, if Harvard grants an exclusive license under any given Patent Rights outside the Field, Harvard shall provide in the license agreement that the exclusive licensee under such Patent Rights outside the Field shall not have the right to enforce the Patent Rights against infringement, even infringement within the field licensed to such licensee, without first conferring with Licensee to reach consensus as to an enforcement strategy with which both Licensee and the third party are comfortable. In order to facilitate such conference, Licensee agrees and Harvard shall provide in the applicable license agreement that the exclusive licensee shall agree to negotiate in good faith and, if agreement on terms is obtained, execute such reasonable confidentiality, common interest or similar agreement, as may be recommended in good faith by counsels to Licensee and such exclusive licensee. Licensee agrees to approach all such discussions with any exclusive licensees of Harvard outside the Field in good faith. Neither Licensee nor any such exclusive licensee shall be required to disclose any information in such conference if counsel to Licensee or such exclusive licensee advises that such disclosure is inadvisable.

7.8 Licensee Actions in Support of Affiliates and Sublicensees. It is understood that the Licensee may exercise its rights under this Article 7 in support of its Affiliates and Sublicensees, and may seek the comments and financial support of Affiliates and Sublicensees on patent prosecution and enforcement, and may make comments and seek to enforce Patent Rights in accordance with this Article 7 to protect the interests of its Affiliates and Sublicensees, in addition to the Licensee's own interests.

8. Warranties: Limitation of Liability.

8.1 Compliance with Law. Licensee represents and warrants that it will comply, and will ensure that its Affiliates and Sublicensees comply, with all local, state, federal and international laws and regulations relating to the development, manufacture, use, sale and importation of Licensed Products. Without limiting the foregoing, Licensee represents and warrants, on behalf of itself and its Affiliates and Sublicensees, that it shall comply with all United States laws and regulations controlling the export of certain commodities and technical data, including without limitation all Export Administration Regulations of the United States Department of Commerce. Among other things, these laws and regulations prohibit or require a license for the export of certain types of commodities and technical data to specified countries. Licensee hereby gives written assurance that it will comply with, and will cause its Affiliates to comply with (and will contractually obligate its Sublicensees to comply with), all United States export control laws and regulations, that as between the parties it bears sole responsibility for any violation of such laws and regulations by itself or its Affiliates or Sublicensees, and that it will indemnify, defend, and hold Indemnitees and HHMI Indemnitees harmless (in accordance with Section 9.1) for the consequences of any such violation.

8.2 Representations and Warranties.

8.2.1 By Harvard. Harvard represents and warrants that (A) Harvard has the authority and right to enter into and perform its obligations under this Agreement and grant the licenses granted to Licensee herein, (B) as of the Effective Date, to the best of the knowledge of Harvard's Office of Technology Development, the execution, delivery and performance of this Agreement by Harvard does not conflict with, or constitute a breach of, any order, judgment, agreement or instrument to which it is a party or is otherwise bound, (C) as of the Effective Date, to the best of the knowledge of Harvard's Office of Technology Development, no consent of any Third Party, including without limitation any governmental authority, is required for Harvard to execute, deliver and perform under this Agreement, including without limitation to grant the licenses granted to Licensee herein, except for such consents as may have been obtained prior to the Effective Date, and (D) as of the Effective Date, Harvard has received assignments from each of the inventors listed on the patent applications for each Patent Right assigning to Harvard each such inventor's entire right, title and interest in and to such Patent Rights. To the best of the knowledge of Harvard's Office of Technology Development, as of the Effective Date, Harvard has not granted to a third party rights that are inconsistent with those granted to Licensee herein.

8.2.2 By Licensee. Licensee represents and warrants that (A) Licensee has the authority and right to enter into and perform its obligations under this Agreement, (B) as of the Effective Date, the best of Licensee's knowledge, the execution, delivery and performance of this Agreement by Licensee does not conflict with, or constitute a breach of, any order, judgment, agreement or instrument to which it is a party or, to its knowledge, is otherwise bound, and (C) as of the Effective Date, the best of Licensee's knowledge, no consent of any Third Party, including without limitation any governmental authority, is required for Licensee to execute, deliver and perform under this Agreement, except for such consents as may have been obtained prior to the Effective Date.

8.3 No Warranty.

8.3.1 Harvard makes no representations or warranties other than those set forth above.

8.3.2 Nothing contained herein shall be deemed to be a warranty by Harvard that it can or will be able to obtain patents on patent applications included in the Patent Rights, or that any of the Patent Rights will afford adequate or commercially worthwhile protection.

8.3.3 HARVARD MAKES NO WARRANTIES WHATSOEVER AS TO THE COMMERCIAL OR SCIENTIFIC VALUE OF THE PATENT RIGHTS. HARVARD MAKES NO REPRESENTATION THAT THE PRACTICE OF THE PATENT RIGHTS OR THE DEVELOPMENT, MANUFACTURE, USE, SALE OR IMPORTATION OF ANY LICENSED PRODUCT, OR ANY ELEMENT THEREOF, WILL NOT INFRINGE ANY PATENT OR PROPRIETARY RIGHTS.

8.3.4 EXCEPT AS OTHERWISE EXPRESSLY PROVIDED IN THIS AGREEMENT, NEITHER PARTY MAKES ANY WARRANTY WITH RESPECT TO ANY TECHNOLOGY, PATENTS, GOODS, SERVICES, RIGHTS OR OTHER SUBJECT MATTER OF THIS AGREEMENT AND EACH PARTY HEREBY DISCLAIMS WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT WITH RESPECT TO ANY AND ALL OF THE FOREGOING.

8.4 Limitation of Liability.

8.4.1 EXCEPT WITH RESPECT TO MATTERS FOR WHICH LICENSEE IS OBLIGATED TO INDEMNIFY INDEMNITEES UNDER ARTICLE 9, NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY WITH RESPECT TO ANY SUBJECT MATTER OF THIS AGREEMENT UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR (A) ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES OR LOST PROFITS OR (B) COST OF PROCUREMENT OF SUBSTITUTE GOODS, TECHNOLOGY OR SERVICES.

8.4.2 Harvard’s aggregate liability for all damages of any kind arising out of or relating to this Agreement or its subject matter under any contract, negligence, strict liability or other legal or equitable theory shall not exceed [**] (including equity issuance and in-kind payments in addition to monetary payments), plus cancellation of future amounts due (in whatever form, including equity issuances and in-kind payments as well as monetary payments) under this Agreement (i.e., damages are permitted to be in whole or in part in the form of cancellation of future obligations of the Licensee in addition to disgorgement of past payments).

9. Indemnification and Insurance.

9.1 Indemnity.

9.1.1 Licensee shall (and shall cause its Affiliates and Sublicensees to) indemnify, defend and hold harmless Harvard and its current and former directors, governing board members, trustees, officers, faculty, medical and professional staff, employees, students, and agents and their respective successors, heirs and assigns (collectively, the "**Indemnitees**") from and against any claim, suit, investigation, action, demand, judgment, liability, cost, expense, damage, deficiency, loss or obligation of any kind or nature (including reasonable attorneys' fees and other costs and expenses of litigation or defense), based upon, arising out of, or otherwise relating to the Licensee's or its Affiliates' or Sublicensees' exercise of rights under this Agreement or any Sublicense or subcontract, including any cause of action relating to product liability concerning any product, process, or service made, used, sold or performed pursuant to any right or license granted under this Agreement (collectively, "**Claims**") except to the extent any such Claim results from or arises out of the gross negligence or willful misconduct of an Indemnitee. No Affiliate of Licensee (other than an Affiliate controlling Licensee) shall have an obligation to indemnify Harvard for any Claim based upon, arising out of, or otherwise relating to the exercise of rights under this Agreement by a different Affiliate of Licensee or by any other person unless such Affiliate or other person is exercising rights granted by such first Affiliate or acting on such first Affiliate's behalf or upon its instruction or advice. No Sublicensee shall have an obligation to indemnify Harvard for any Claim based upon, arising out of, or otherwise relating to the exercise of rights under this Agreement by a different Sublicensee, Licensee, any Affiliate of Licensee or by any other person unless such different Sublicensee, Licensee or Affiliate or other person is exercising rights granted by such first Sublicensee or acting on such first Sublicensee's behalf or upon its instruction or advice.

9.1.2 Procedures. The Indemnitees agree to provide Licensee with prompt written notice of any Claim for which indemnification is sought under this Agreement (in any event no later than [**] days after the Indemnitee learns of the earliest event that is part of the Claim); provided, however, that an Indemnitee's delay in providing or failure to provide such notice shall not relieve Licensee of its indemnification obligations under this Agreement, except to the extent Licensee can demonstrate actual prejudice due to the delay or lack of notice. Licensee agrees, at its own expense, to provide attorneys reasonably acceptable to Harvard to defend against any such Claim. The Indemnitees shall cooperate with Licensee, at Licensee's expense, in such defense and shall permit Licensee (or its designee) to conduct and control such defense and the disposition of such Claim (including without limitation all decisions relative to litigation, appeal, and settlement); provided, however, that any Indemnitee shall have the right to retain its own counsel, at the expense of Licensee, if representation of such Indemnitee by the counsel retained by Licensee would be inappropriate because of actual or potential differences in the interests of such Indemnitee and any other party represented by such counsel; and provided further, however, that Harvard also shall have the additional right to employ separate counsel and to participate in the defense of a Claim (as reasonably directed by Licensee) at its own expense (not subject to later indemnification). Harvard agrees to use diligent efforts to select counsel, and to cause any other Indemnitees affiliated with their respective institutions to select counsel, that minimizes the number of counsel retained by all Indemnitees if representation of an Indemnitee by the counsel retained by Licensee would be inappropriate because of actual or potential differences in the interests of such Indemnitee and any other party represented by such counsel. Licensee agrees to keep counsel(s) for Indemnitees informed of the progress in the

defense and disposition of such claim and to consult with Harvard with regard to any proposed settlement. Licensee shall not settle any Claim that has a materially adverse effect on the rights of any Indemnitee hereunder or that admits any liability by or imposes any obligation on any Indemnitee without the prior written consent of such Indemnitee, which consent shall not be unreasonably withheld, conditioned or delayed. An Indemnitee may not settle any Claim without the prior written consent of Licensee, which consent shall not be unreasonably withheld, conditioned or delayed. If Licensee fails to assume defense of a Claim within a reasonable time, an Indemnitee may defend (at Licensee's sole expense) and settle such Claim on such terms as such Indemnitee deems appropriate with the prior written consent of Licensee (such consent not to be unreasonably withheld, delayed or conditioned), and Licensee shall be obligated to indemnify such Indemnitee for such settlement as provided in this Article 9.

9.1.3 HHMI, and its trustees, officers, employees, and agents (collectively, "**HHMI Indemnitees**"), shall be indemnified, defended by counsel acceptable to HHMI, and held harmless by Licensee, from and against any claim, liability, cost, expense, damage, deficiency, loss, or obligation, of any kind or nature (including, without limitation, reasonable attorneys' fees and other costs and expenses of defense) (collectively, "**HHMI Claims**"), based upon, arising out of, or otherwise relating to this Agreement or any Sublicense or subcontract, including without limitation any cause of action relating to product liability. Notwithstanding Section 8.4 or any other provision of this Agreement, Licensee's obligation to defend, indemnify and hold harmless the HHMI Indemnitees under this paragraph shall not be subject to any limitation or exclusion of liability or damages or otherwise limited in any way.

9.1.4 Notwithstanding anything express or implied, Licensee shall not be required to indemnify, defend, or hold harmless any Indemnitee or HHMI Indemnitee with respect to any dispute amongst any Indemnitee(s), HHMI Indemnitee(s), and/or subsets of any of the foregoing, as to the division amongst themselves of the consideration paid by Licensee under this Agreement.

9.2 Insurance.

9.2.1 Beginning at the time any Licensed Product is being commercially distributed or sold (other than for the purpose of obtaining regulatory approvals) by Licensee, or by an Affiliate, Sublicensee or agent of Licensee, Licensee shall, at its sole cost and expense, procure and maintain commercial general liability insurance in amounts not less than $[**] per incident and $[**] annual aggregate and naming the Indemnitees and HHMI Indemnitees as additional insureds. During clinical trials of any such Licensed Product or Enabled Product Licensee shall, at its sole cost and expense, procure and maintain commercial general liability insurance in such equal or lesser amount as Harvard and HHMI shall require, naming the Indemnitees and HHMI Indemnitees as additional insureds. Such commercial general liability insurance shall provide: (a) product liability coverage and (b) broad form contractual liability coverage for Licensee's indemnification obligations under this Agreement.

9.2.2 If Licensee elects to self-insure all or part of the limits described above in Section 9.2.1 (including deductibles or retentions that are in excess of $[**] annual aggregate) such self-insurance program must be acceptable to Harvard and CRICO/RMF (Harvard's insurer) in their sole discretion. The minimum amounts of insurance coverage required shall not be construed to create a limit of Licensee's liability with respect to its indemnification obligations under this Agreement.

9.2.3 Licensee shall provide Harvard with written evidence of such insurance upon request of Harvard. Licensee shall provide Harvard with written notice at least [**] days prior to the cancellation, non-renewal or material change in such insurance. If Licensee does not obtain replacement insurance providing comparable coverage within such [**] day period, Harvard shall have the right to terminate this Agreement effective at the end of such [**] day period without notice or any additional waiting periods.

9.2.4 Licensee shall maintain such commercial general liability insurance beyond the expiration or termination of this Agreement during: (a) the period that any Licensed Product is being commercially distributed or sold by Licensee, or an Affiliate, Sublicensee or agent of Licensee; and (b) a reasonable period after the period referred to in (a) above which in no event shall be less than [**] years.

10. Term and Termination.

10.1 Term. The term of this Agreement shall commence on the Effective Date and, unless earlier terminated as provided in this Article 10, shall continue in full force and effect until the expiration of the last to expire Valid Claim (the "**Term**") or end of the Royalty Term.

10.2 Termination.

10.2.1 Termination Without Cause. Licensee may terminate this Agreement upon [**] days prior written notice to Harvard, with or without cause.

10.2.2 Termination for Default.

10.2.2.1 In the event that either party commits a material breach of its obligations under this Agreement and fails to cure that breach within [**] days after receiving written notice thereof which written notice explicitly states that it is a notice of material breach under this Section 10.2.2.1, the other party may terminate this Agreement immediately upon written notice to the party in breach.

10.2.2.2 If Licensee defaults in its obligations under Section 9.2 to procure and maintain insurance or, if Licensee has in any event failed to comply with the notice requirements contained therein, then Harvard may terminate this Agreement immediately without notice or additional waiting period.

10.2.2.3 Harvard shall be entitled to terminate this Agreement in its entirety in accordance with the provisions of Section 3.4.6.1.

10.2.3 Bankruptcy. Harvard may terminate this Agreement upon written notice to Licensee if Licensee becomes insolvent, is adjudged bankrupt, applies for judicial or extra-judicial settlement with its creditors, makes an assignment for the benefit of its creditors, voluntarily files for bankruptcy or has a receiver or trustee (or the like) in bankruptcy appointed by reason of its insolvency, or in the event an involuntary bankruptcy action is filed against Licensee and not dismissed within [**] days, or if Licensee becomes the subject of liquidation or dissolution proceedings or otherwise discontinues all business operations.

10.3 Effect of Termination.

10.3.1 Termination of Rights. Upon expiration or termination of this Agreement by either party pursuant to any of the provisions of Section 10.2: (a) the rights and licenses granted to Licensee under Article 2 shall terminate, all rights in and to and under the Patent Rights will revert to Harvard and neither Licensee nor its Affiliates may make any further use or exploitation of the Patent Rights; and (b) any existing agreements that contain a Sublicense shall terminate to the extent of such Sublicense; provided, however, that, solely in the case of termination by Harvard for breach pursuant to the provisions of Section 10.2.2 or on account of bankruptcy pursuant to the provisions of Section 10.2.3, for each Sublicensee, upon termination of the Sublicense agreement with such Sublicensee, if the Sublicensee was not then in breach of its Sublicense agreement with Licensee such that Licensee would have had the right to terminate such Sublicense and if the actions or failure to act of such Sublicensee did not give rise to the basis for termination by Harvard, such Sublicensee shall have the right to enter into a direct license from Harvard under the Patent Rights within the scope of the Sublicensee's Sublicense, on the same milestone and royalty terms as set forth in this Agreement. Harvard agrees to negotiate in good faith the final form of such license agreement on such financial terms and conditions; such final form of direct license agreement shall not impose any representations, warranties, obligations or liabilities on Harvard that are not included in this Agreement.

10.3.2 Accruing Obligations. Termination or expiration of this Agreement shall not relieve the parties of obligations accruing prior to such termination or expiration, including obligations to pay amounts accruing hereunder up to the date of termination or expiration. After the date of termination or expiration (except in the case of termination by Harvard pursuant to Section 10.2). Licensee, its Affiliates and Sublicensees (a) may sell Licensed Products then in stock and (b) may complete the production of Licensed Products then in the process of production and sell the same; provided that, in the case of both (a) and (b), Licensee shall pay the applicable royalties and payments to Harvard in accordance with Article 4, provide reports and audit rights to Harvard pursuant to Article 5 and maintain insurance in accordance with the requirements of Section 9.2. The parties agree that the obligations in Section 4.1 (Equity) and Section 6.2 (Patent Expenses) (with respect to patent expenses incurred by Harvard prior to the Effective Date) will accrue immediately upon execution of this Agreement by both parties, regardless of invoice and payment timing details set forth therein.

10.3.3 Regulatory Filings. Licensee shall have the exclusive right to prepare and present all regulatory filings necessary or appropriate in any country and to obtain and maintain any regulatory approval required to market Licensed Products in any such country. Licensee shall solely own all right, title and interest in and to all such regulatory approvals and filings; provided, however, that in the event Licensee terminates this Agreement pursuant to Section 10.2.1 or Harvard terminates this Agreement pursuant to any of the provisions of Section 10.2, Licensee shall reasonably consider and promptly discuss in good faith with Harvard reasonable terms upon which Licensee would be willing to provide Harvard with the right to reference, cross-reference, review, have access to, incorporate and use all documents and other materials filed by or on behalf of Licensee and its Affiliates with any Regulatory Authority in furtherance of applications for regulatory approval in the relevant country with respect to Licensed Products.

10.4 Survival. The parties' respective rights, obligations and duties under Articles 5, 9, 10 and 11 and Sections 4.1, 4.2 (to the extent of payment obligations accruing prior to the effective date of expiration or termination), 4.3 (to the extent of payment obligations accruing prior to the effective date of expiration or termination), 4.4 (to the extent of Net Sales prior to the effective date of expiration or termination) 4.5 (to the extent applicable at the effective date of expiration or termination), 4.7 (for so long as Licensee, its Affiliate or a Sublicensee is researching, developing or commercializing an Enabled Product(s)), 6.2 (for expenses incurred prior to the effective date of expiration or termination), 8.3 and 8.4, shall survive any expiration or termination of this Agreement. In addition, Licensee's obligations under Section 4.4 and 4.6 with respect to Sublicenses granted prior to the effective date of expiration or termination of the Agreement shall survive such expiration or termination.

11. Miscellaneous.

11.1 Confidentiality.

11.1.1 Definitions.

11.1.1.1 "**Harvard Confidential Information**" means (a) any information related to Prosecution of Patent Rights provided to Licensee by Harvard; (b) any information or material in tangible form that is marked as "confidential" or proprietary by Harvard at the time it is sent to Licensee; (c) information that is furnished orally by Harvard if Harvard identifies such information as "confidential" or proprietary in writing by a memorandum delivered to Licensee within [**] days after the date of disclosure; and (d) the terms of this Agreement (but not its existence or general subject matter), which shall constitute the Confidential Information of both Parties.

11.1.1.2 "**Licensee Confidential Information**" means (a) any Development Plan; (b) any reports prepared by Licensee and provided to Harvard pursuant to this Agreement (including any under Sections 3.3 and 5.1.1); (c) any copies of Sublicenses, or information extracted therefrom, provided by Licensee to Harvard under Section 2.4.3; (d) any information or material in tangible form that is provided to Harvard in connection with this Agreement and is marked as "confidential" or proprietary by Licensee at the time it is sent to Harvard or is furnished orally by Licensee if Licensee identifies such information as "confidential" or proprietary in writing by a memorandum delivered to Harvard within [**] days after the date of disclosure; or (e) the terms of this Agreement (but not its existence or general subject matter of it), which shall constitute the Confidential Information of both Parties. The Parties agree that Harvard may share the terms of this Agreement with HHMI.

11.1.1.3 “**Confidential Information**” means the Harvard Confidential Information and the Licensee Confidential Information, as applicable.

11.1.2 Obligations of Confidentiality. For the Term of this Agreement and a period of [**] years thereafter, (a) Licensee shall maintain in confidence and shall not disclose to any third party any Harvard Confidential Information, and (b) Harvard shall maintain in confidence and shall not disclose to any third party any Licensee Confidential Information, provided that Harvard may disclose to HHMI (A) the terms of this Agreement, including any Schedules and Exhibits, and (B) such Licensee Confidential Information as HHMI reasonably requests, provided that any disclosure under the foregoing clause (A) shall be made in confidence to HHMI and that any disclosure under the foregoing clause (B) shall be under terms of a written confidentiality agreement prohibiting the use and further disclosure by HHMI of such Licensee Confidential Information on terms as least as restrictive as those contained herein. Each Party shall take all reasonable steps to protect the Confidential Information of the other Party with the same degree of care used to protect its own confidential or proprietary information. Neither Party shall use the Confidential Information of the other Party for any purpose other than those contemplated by this Agreement. The foregoing obligations under this Section 11.1.2 shall not apply to:

(i) information that is known to the receiving Party or independently developed by the receiving Party prior to the time of disclosure without use of or reference to the other Party’s Confidential Information, in each case, to the extent evidenced by contemporaneous written records;

(ii) information that is independently developed by the receiving Party at or after the time of disclosure without use of or reference to the other Party’s Confidential Information, to the extent evidenced by contemporaneous written records;

(iii) information disclosed to the receiving Party by a third party that has a right to make such disclosure;

(iv) information that is or becomes generally known or available to the public, other than as a result of a breach of this Agreement by the receiving Party; or

(v) information that is required to be disclosed by order of the FDA or similar authority or a court of competent jurisdiction or other government authority or agency; provided that the Parties shall use commercially reasonable efforts to obtain confidential treatment of such information by the agency, authority, or court.

11.1.3 Permitted Disclosures. Notwithstanding Section 11.1.2, either Party may disclose Confidential Information of the other Party to the extent such disclosure is reasonably necessary in the following instances:

11.1.3.1 prosecuting or defending litigation in accordance with Article 7 of this Agreement; provided that the party making a disclosure under this Section 11.1.3.1 shall seek confidential treatment, a protective order, or seek to file under seal if reasonably requested by the other party;

11.1.3.2 making filings with the Securities and Exchange Commission or foreign equivalent, any stock exchange or market, or any Regulatory Authorities, which shall include publicly disclosing or filing this Agreement as a "material agreement" in accordance with applicable law or applicable stock exchange regulations;

11.1.3.3 complying with applicable laws, rules, regulations or orders (collectively, "**Law**") or submitting information to governmental authorities; provided that if either Party is required by Law to make any public disclosure of Confidential Information of the other Party, to the extent the Party so required may legally do so, it will give reasonable advance notice to the other Party of such disclosure and will use its reasonable efforts to secure confidential treatment of such Confidential Information prior to its disclosure (whether through protective orders or otherwise);

11.1.3.4 in the case of Licensee as the receiving Party, to its Affiliates and its and their prospective and actual acquirers, licensees, sublicensees, distributors, investors, lenders and underwriters, each of which prior to disclosure must be bound by written or legally enforceable professional ethical obligations of confidentiality and non-use of substantially equivalent or greater scope and duration than those set forth in this Section 11.1, and (a) its and their employees, consultants, agents, and advisors, on a need to know basis, each of whom prior to disclosure must be bound by written obligations of confidentiality and non-use of substantially equivalent or greater scope and duration than those set forth in this Section 11.1, and (b) its and their accountants and lawyers, on a need to know basis, each of whom prior to disclosure must be bound by written or legally enforceable professional ethical obligations of confidentiality and non-use of substantially equivalent or greater scope and duration than those set forth in this Section 11.1; and

11.1.3.5 in the case of Harvard as the receiving Party, to Harvard's prospective and actual licensees (including Sublicensees in the event of termination of this Agreement by Harvard for breach pursuant to the provisions of Section 10.2.2 or on account of bankruptcy pursuant to the provisions of Section 10.2.3). acquirers of payment or equity rights (including Osage), lenders and underwriters, each of which prior to disclosure must be bound by written or legally enforceable professional ethical obligations of confidentiality and non-use of substantially equivalent or greater scope and duration than those set forth in this Section 11.1 and (a) its and their employees, consultants, agents, and advisors, on a need to know basis, each of whom prior to disclosure must be bound by written obligations of confidentiality and non-use of substantially equivalent or greater scope and duration than those set forth in this Section 11.1, and (b) its and their accountants and lawyers, on a need to know basis, each of

whom prior to disclosure must be bound by written or legally enforceable professional ethical obligations of confidentiality and non-use of substantially equivalent or greater scope and duration than those set forth in this Section 11.1; provided that the disclosure to prospective or actual licensees (and the related persons noted in the foregoing clauses (a) and (b)) is limited to such Confidential Information of Licensee as is reasonably necessary for such prospective or actual licensee to conduct technical or legal due diligence or exercise its rights under the license granted or proposed to be granted under the Patent Rights to such actual or prospective licensee by Harvard; provided, further, that financial terms will not be included in any such disclosure to prospective or actual licensees that are not a Sublicensee coming into a direct license as provided for in this Agreement.

11.2 Preference for United States Industry. During the period of exclusivity of this license in the United States, Licensee shall comply with 37 C.F.R. § 401.14 (i) or any successor rule or regulation.

11.3 No Security Interest. Licensee shall not enter into any agreement under which Licensee grants to or otherwise creates in any third party a security interest in this Agreement or any of the rights granted to Licensee herein. Any grant or creation of a security interest purported or attempted to be made in violation of the terms of this Section 11.3 shall be null and void and of no legal effect.

11.4 Use of Name. Except as provided below, Licensee shall not, and shall ensure that its Affiliates and Sublicensees shall not, use or register the name "**Harvard**" (alone or as part of another name) or any logos, seals, insignia or other words, names, symbols or devices that identify Harvard or any Harvard school, unit, division or affiliate ("**Harvard Names**") for any purpose except with the prior written approval of, and in accordance with restrictions required by, Harvard. Without limiting the foregoing, Licensee shall, and shall ensure that its Affiliates and Sublicensees shall, cease all use of Harvard Names on the termination or expiration of this Agreement except as otherwise approved by Harvard. This restriction shall not apply to any information required by Law to be disclosed to any governmental entity. Licensee shall not use or register the name "Howard Hughes Medical Institute" or any variation, adaptation, or abbreviation thereof (alone or as part of another name) or any logos, seals, insignia or other words, names, symbols or devices that identify HHMI or any unit of HHMI ("**HHMI Names**") or of any HHMI employee (including Dr. David Liu) in a manner that reasonably could constitute an endorsement of a commercial product or service; but that use for other purposes, even if commercially motivated, is permitted provided that (1) the use is limited to accurately reporting factual events or occurrences, and (2) any reference to an HHMI Name or any HHMI employees (including Dr. David Liu) in press releases or similar materials intended for public release is approved by HHMI in advance.

11.5 Entire Agreement. This Agreement is the sole agreement with respect to the subject matter hereof and except as expressly set forth herein, supersedes all other agreements and understandings between the parties with respect to the same.

11.6 Notices. Unless otherwise specifically provided, all notices required or permitted by this Agreement shall be in writing and may be delivered personally, or may be sent by e-mail, expedited delivery or certified mail, return receipt requested, to the following addresses, unless the parties are subsequently notified of any change of address in accordance with this Section 11.6:

If to Licensee (other than invoices):	Beam Therapeutics c/o F-Prime Capital 1 Main Street 13th Floor Cambridge, MA 02142 Email: [**] Attn.: CEO With required email copies to each of: [**] and [**]
If to Licensee (invoices only):	Same as above until updated by Licensee by written notice as per this Section.
If to Harvard:	Office of Technology Development Harvard University Richard A. and Susan F. Smith Campus Center, Suite 727 1350 Massachusetts Avenue Cambridge, Massachusetts 02138 Email: [**] Attn.: [**]

Any notice shall be deemed to have been received as follows: (a) by personal delivery or expedited delivery, upon receipt; (b) by e-mail, upon transmission and electronic confirmation of delivery; (c) by certified mail, as evidenced by the return receipt. If notice is sent by e-mail, a confirming copy of the same shall be sent by mail to the same address.

11.7 Dispute Resolution. If any dispute between the parties arises out of or relates to this Agreement (a "**Dispute**"), either party by written notice to the other party may have such issue referred for resolution to the Chief Executive Officer of Licensee, and the Chief Technology Development Officer of Harvard (collectively, the "**Executive Officers**"). The Executive Officers shall meet promptly to discuss the matter submitted and to determine a resolution. If the Executive Officers are unable to resolve the Dispute within [**] days after it is referred to them, then the parties may pursue all other rights and remedies available to them under this Agreement, including the right to terminate this Agreement, and the matter may be brought by a party as a Suit in a court of competent jurisdiction in accordance with Section 11.8.

11.8 Governing Law and Jurisdiction. This Agreement will be governed by, and construed in accordance with, the substantive laws of the Commonwealth of Massachusetts, without giving effect to any choice or conflict of law provision, except that questions affecting the construction and effect of any patent shall be determined by the law of the country in which the patent shall have been granted. Any action, suit or other proceeding arising under or relating to this Agreement (a "**Suit**") shall be brought in a court of competent jurisdiction in the Commonwealth of Massachusetts, and the parties hereby consent to the sole jurisdiction of the state and federal courts sitting in the Commonwealth of Massachusetts. Each party agrees not to raise any objection at any time to the laying or maintaining of the venue of any Suit in any of the specified courts, irrevocably waives any claim that Suit has been brought in any inconvenient forum and further irrevocably waives the right to object, with respect to any Suit, that such court does not have any jurisdiction over such party.

11.9 Binding Effect. This Agreement shall be binding upon and inure to the benefit of the parties and their respective legal representatives, successors and permitted assigns.

11.10 Headings. Section and subsection headings are inserted for convenience of reference only and do not form a part of this Agreement.

11.11 Counterparts. The parties may execute this Agreement in two or more counterparts, each of which shall be deemed an original, but both of which together shall constitute one and the same instrument. Transmission by facsimile or electronic mail of an executed counterpart of this Agreement shall be deemed to constitute due and sufficient delivery of such counterpart. If by electronic mail, the executed Agreement must be delivered in a .pdf format.

11.12 Amendment; Waiver. This Agreement may be amended, modified, superseded or canceled, and any of the terms may be waived, only by a written instrument executed by each party or, in the case of waiver, by the party waiving compliance. The delay or failure of either party at any time or times to require performance of any provisions hereof shall in no manner affect the rights at a later time to enforce the same. No waiver by either party of any condition or of the breach of any term contained in this Agreement, whether by conduct, or otherwise, in any one or more instances, shall be deemed to be, or considered as, a further or continuing waiver of any such condition or of the breach of such term or any other term of this Agreement.

11.13 No Agency or Partnership. Nothing contained in this Agreement shall give either party the right to bind the other, or be deemed to constitute either party as agent for or partner of the other or any third party.

11.14 Assignment and Successors. This Agreement may not be assigned by either Party without the consent of the other Party, which consent shall not be unreasonably withheld, except that each Party may, without such consent, assign this Agreement and the rights, obligations and interests of such Party to any purchaser of all or substantially all of its assets or all of its equity, or to any successor corporation resulting from any merger or consolidation of such Party with or into such corporation; provided, in each case, the assignee agrees in writing to be bound by the

terms of this Agreement and, if the Licensee is the assignor, specifically agrees to be bound by the obligations to HHMI set forth in this Agreement, and a copy of such writing is provided to the other Party within [**] business days after such assignment. Any assignment purported or attempted to be made in violation of the terms of this Section 11.14 shall be null and void and of no legal effect.

11.15 Force Majeure. Except for monetary obligations hereunder, neither party will be responsible for delays resulting from causes beyond the reasonable control of such party, including fire, explosion, flood, war, strike, or riot, provided that the nonperforming party uses commercially reasonable efforts to avoid or remove such causes of nonperformance and continues performance under this Agreement with reasonable dispatch whenever such causes are removed.

11.16 Interpretation. Each party hereto acknowledges and agrees that: (a) it and/or its counsel reviewed and negotiated the terms and provisions of this Agreement and has contributed to its revision; (b) the rule of construction to the effect that any ambiguities are resolved against the drafting party shall not be employed in the interpretation of this Agreement; (c) the terms and provisions of this Agreement shall be construed fairly as to both parties hereto and not in favor of or against either party, regardless of which party was generally responsible for the preparation of this Agreement; and (d) the use of "**include**," "**includes**," or "**including**" herein shall not be limiting and "**or**" shall not be exclusive.

11.17 Severability. If any provision of this Agreement is or becomes invalid or is ruled invalid by any court of competent jurisdiction or is deemed unenforceable, or interferes with the enforceability of any Patent Right, it is the intention of the parties that such provision shall be null and void and deemed excised from this Agreement and the remainder of this Agreement shall not be affected.

11.18 Publicity. Notwithstanding the terms of Section 11.4 above (Use of Name), the Parties hereby agree to issue a mutually-acceptable press release announcing the execution of this Agreement, within [**] days following the Effective Date; provided, however, that Beam may extend such [**] day period one time for an additional [**] days upon advance written notice to Harvard if Beam has a good faith belief that premature disclosure of the existence of this Agreement would be detrimental to the business or affairs of Beam in light of then ongoing negotiations with a third party(ies) regarding a license(s) or strategic transaction(s), and the Parties may extend such period by additional [**]-day increments by mutual written consent. Beam shall provide Harvard with a written summary of the basis for such belief with any such notice. Each Party agrees that it will not issue a press release or other public statement relating to this Agreement or the relationship of the Parties without obtaining the prior written approval of the other Party. Any use of HHMI Names or the name of any HHMI employee (including Dr. David Liu) in any press release or public statement must be approved by HHMI in advance. Permission shall not be required to repeat information that has already been publicly released.

11.19 HHMI Third Party Beneficiary. HHMI is not a party to this Agreement and has no liability to Licensee or any licensee, sublicensee, or user of anything covered by this Agreement, but HHMI is an intended third-party beneficiary of this Agreement and certain of its provisions are for the benefit of HHMI and are enforceable by HHMI in its own name.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the date first written above.

President and Fellows of Harvard College

By: /s/ Jordan B. Grant
Name: Jordan B. Grant
Title: Director of Technology Transactions
Office of Technology Department
Harvard University

Beam Therapeutics, Inc.

By: /s/ John Evans
Name: John Evans
Title: CEO

Exhibit 3.1.1

[**]

Exhibit 4.1

Form of Subscription Agreement

SUBSCRIPTION AGREEMENT

This Subscription Agreement (the "Agreement") is made and entered into as of [_____], 2017, by and between Beam Therapeutics Inc., a Delaware corporation (the "Company") and President and Fellows of Harvard College (the "Purchaser").

WHEREAS, on the terms and subject to the conditions set forth herein, the Purchaser desires to subscribe for and purchase, and the Company proposes to sell to the Purchaser, [_____] shares (the "Shares") of the Company's Common Stock, par value $0.01 per share (the "Common Stock"), as partial payment for the licenses and other rights granted to the Company by the Purchaser, pursuant to Section [__] of that certain License Agreement, by and between the Company and the Purchaser, dated as of [_____], 2017 (the "License Agreement").

NOW, THEREFORE, in consideration of the foregoing and of the mutual covenants and obligations hereinafter set forth and of other good and valuable consideration, the adequacy and receipt of which are hereby acknowledged, the parties hereto, intending to be legally bound, hereby agree as follows:

1. **Purchase And Sale Of Shares**.

1.1. Purchase and Sale of Shares. Subject to the terms and conditions set forth herein, upon the execution hereof, the Company shall sell to the Purchaser, and the Purchaser shall purchase from the Company, the Shares as consideration for the licenses and other rights granted to the Company by the Purchaser pursuant to the License Agreement.

1.2. Delivery of Certificates Representing Purchased Shares. The Company shall deliver to the Purchaser a certificate in the name of the Purchaser representing the Shares purchased by the Purchaser.

1.3. Delivery of Joinder Agreements. The Purchaser shall deliver to the Company a joinder signature page to that certain Voting Agreement, by and among the Company and the parties set forth therein, dated on or about the date hereof, in substantially the form attached hereto as Exhibit A-1, and that certain Right of First Refusal and Co-Sale Agreement, by and among the Company and the parties set forth therein, dated on or about the date hereof, in substantially the form attached hereto as Exhibit A-2.

2. **Representations and Warranties of the Purchaser**. The Purchaser hereby represents and warrants as of the date hereof to the Company as follows:

2.1. Investment Representation. Such Purchaser is an "accredited investor" under Regulation D of the U.S. Securities Act of 1933, as amended (the "Securities Act"). Such Purchaser is aware that the Shares have not been registered under the Securities Act, or qualified under any state securities laws. The Shares are being acquired for investment purposes only and not for sale or with a view to distribution of all or any part thereof in violation of the securities laws.

2.2. Access to Information. Such Purchaser has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of its purchase of the Shares and regarding the business, financial affairs and other aspects of the Company, and it has further had the opportunity to obtain any information (to the extent the Company possesses or can acquire such information without unreasonable effort or expense) which it deems necessary to evaluate its investment or to verify the accuracy of information otherwise provided to it.

2.3. Restricted Securities. Such Purchaser understands that the Shares will be characterized as "restricted securities" under the Securities Act and that under such laws and applicable regulations, the Shares may be resold without registration under the Securities Act only in certain limited circumstances, and that otherwise the Shares must be held indefinitely. Such Purchaser further represents that it is familiar with Rule 144 promulgated under the Securities Act, as presently in effect, and the conditions which must be met in order for Rule 144 to be available for resale of "restricted securities," and understands the resale limitations imposed by the Securities Act.

2.4. Authority. Such Purchaser has authority to execute and deliver this Agreement and to perform its obligations hereunder. This Agreement has been duly and validly executed and delivered by such Purchaser and (assuming the due authorization, execution and delivery by the Company) constitutes the legal, valid and binding obligation of the Purchaser, enforceable against the Purchaser in accordance with its terms.

2.5. Organization. Such Purchaser is duly organized, validly existing and in good standing under the laws of the jurisdiction of its formation.

3. **Representations and Warranties of the Company**. The Company represents and warrants as of the date hereof to the Purchaser as follows:

3.1. Authorization. The Company has all requisite corporate power and authority to execute and deliver this Agreement, sell the Shares and otherwise perform its obligations hereunder. The execution, delivery and performance of this Agreement and the consummation by the Company of the transactions contemplated hereby have been duly and validly authorized by all necessary corporate action. This Agreement has been duly and validly executed and delivered by the Company and (assuming the due authorization, execution and delivery by the Purchaser) this Agreement constitutes the legal, valid and binding obligation of the Company, enforceable against it in accordance with its terms.

3.2. Organization. The Company is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware.

3.3. Capitalization. The authorized capital stock of the Company immediately prior to consummation of the transactions contemplated by this Agreement consists solely of [_____] shares of Common Stock, of which [_____] shares are issued and outstanding, and [_____] shares of Preferred Stock of which [_____] shares are issued and outstanding.

3.4. All currently issued and outstanding shares of Company capital stock are duly authorized, validly issued, fully paid, non-assessable and free of all preemptive rights. The Shares, when issued to the Purchaser under this Agreement, will be duly authorized, validly issued, fully paid, non-assessable and free of all preemptive rights.

4. **Preemptive Rights**.

4.1. Subject to the terms and conditions of this Section 4 and applicable securities laws, if the Company proposes to offer or sell any New Securities after the Financing Threshold (as defined in the License Agreement) has been achieved, the Purchaser shall have the right to purchase from the Company that portion of such New Securities as equals the proportion that the Common Stock then held by the Purchaser (including all shares of Common Stock then issuable upon conversion and/or exercise, as applicable, of Preferred Stock and any other equity securities then held by the Purchaser) bears to the total Common Stock of Licensee then outstanding on a Fully-Diluted Basis (as defined in the License Agreement). Following notice by the Company to the Purchaser, stating (i) its bona fide intention to offer such New Securities, (ii) the number of such New Securities to be offered in aggregate and the corresponding number the Purchaser has the right to purchase, and (iii) the price and terms, if any, upon which it proposes to offer such New Securities, the Purchaser may elect to purchase or otherwise acquire, at the price and on the terms specified in the notice, up to that portion of such New Securities eligible for purchase by the Purchaser by notification to the Company within twenty (20) days after the offer notice is given. The Company may elect to give notice to the Purchaser in advance of or within thirty (30) days following the issuance of New Securities.

4.2. "New Securities" shall mean, collectively, equity securities of the Company, whether or not currently authorized, but shall not include (a) Exempted Issuances (as defined in the License Agreement), (b) shares of common stock issued or issuable, and options, warrants or other rights to purchase Common Stock issued or issuable to Licensee's employees, consultants, officers, directors, or advisors as part of an incentive compensation arrangement or to Licensee's former employees, consultants, officers, directors, or advisors as part of a settlement of any dispute regarding incentive compensation arrangements, (c) shares of Common Stock issued or issuable to banks, equipment lessors, real property lessors, financial institutions or other persons engaged in the business of making loans pursuant to a debt financing, commercial leasing or real property leasing transaction, or (d) shares of Common Stock issued or issuable in connection with any settlement of any action, suit, proceeding or litigation.

4.3. The Purchaser may not assign the rights set forth pursuant to this Section 4 without the consent of the Company to any third party other than Osage or a holder of the Preferred Stock of the Company; provided, however, that the Purchaser may assign the foregoing right without the consent of the Company to any third party other than Osage or a holder of the preferred stock of Licensee provided that in each such case, the Purchaser notifies the Company in writing in connection with the transfer of such rights.

4.4. The preemptive rights in this Section 4 shall not be applicable to (i) Exempted Securities (as defined in the Company's Certificate of Incorporation, as it may be amended and/or restated from time to time); or (ii) shares of Common Stock issued in a public offering.

4.5. The covenants set forth in this Section 4 shall terminate and be of no further force or effect upon the earliest to occur of (i) immediately before the consummation of the Company's first underwritten public offering of securities, (ii) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, (iii) upon a Deemed Liquidation Event (as defined in the Company's Certificate of Incorporation, as it may be amended and/or restated from time to time), or (iv) upon the termination of the License Agreement.

5. **Miscellaneous**.

5.1. Governing Law. This Agreement and all matters arising hereunder shall be governed by and construed under the laws of the State of Delaware, without regard to its conflicts of law rules or provisions.

5.2. Severability. If any provision of this Agreement or the application of such provision to any person or circumstance shall be held by a court of competent jurisdiction to be invalid, illegal, or unenforceable under the applicable law of any jurisdiction, (i) the remainder of this Agreement or the application of such provisions to other persons or circumstances or in other jurisdictions shall not be affected thereby, (ii) such invalid, illegal, or unenforceable provision shall be deemed inoperative to the extent that it may conflict therewith and shall be deemed modified to conform with such law, and (iii) such invalid, illegal, or unenforceable provision shall not affect the validity or enforceability of any other provision of this Agreement.

5.3. Counterparts. This Agreement may be executed in one or more counterparts, each of which when so executed and delivered shall be deemed an original, and all of which when taken together shall constitute one and the same instrument. The execution of this Agreement may be by actual or facsimile signature.

5.4. Entire Agreement; Survival. This Agreement constitutes the entire agreement of the parties hereto in respect of the subject matter hereof and thereof, and supersedes any and all prior agreements or understandings between the parties hereto in respect of such subject matter. Either party's failure to enforce any provision or provisions of this Agreement shall not in any way be construed as a waiver of any such provision or provisions, nor prevent that party thereafter from enforcing each and every other provision of this Agreement. The rights granted both parties herein are cumulative and shall not constitute a waiver of either party's right to assert all other legal remedies available to it under the circumstances. The representations and warranties of the parties contained in this Agreement shall survive the execution and delivery of this Agreement and the consummation of the transactions contemplated by this Agreement.

[**Reminder of Page Intentionally left Blank**]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed, all as of the date first written above.

BEAM THERAPEUTICS INC.

By: _____
Name:
Title:

PRESIDENT AND FELLOWS OF HARVARD COLLEGE

By: _____
Name:
Title:

Exhibit 4.4.5

Arbitration for Combination Products

1. If Harvard and Licensee do not agree within [**] days upon the allocation based on the relative contribution of value of the Licensed Product and the Other Active Component(s) in a combination product as provided in Section 4.4.5, then either party may refer such disagreement (an "**Allocation Dispute**") for resolution by arbitration in accordance with the terms of this Exhibit 4.4.5.

2. If a party desires to pursue resolution of the Allocation Dispute, then the Allocation Dispute shall be submitted by either party for resolution in arbitration pursuant to the then current *CPR Non-Administered Arbitration Rides* ("***CPR Rules***") (www.cpradr.org), except where they conflict with the provisions of this Exhibit 4.4.5, in which case these provisions control. The arbitration will be held in Boston, Massachusetts. All aspects of the arbitration shall be treated as confidential.

3. The arbitrators will be chosen from the CPR Panel of Distinguished Neutrals, unless a candidate not on such panel is approved by both parties in writing. Each arbitrator shall be an attorney (active or retired) admitted to practice in a state of the United States with at least fifteen (15) years' experience with a law firm or corporate law department of over twenty-five (25) lawyers, with substantial experience in negotiating or litigating complex transactions in the biopharmaceutical industry.

4. The arbitration tribunal shall consist of three (3) arbitrators (each having the qualifications referred to in Paragraph 3 above), of whom each party shall designate one in accordance with the "screened" appointment procedure provided in CPR Rule 5.4. The chair will be chosen in accordance with CPR Rule 6.4. If, however, the parties in their discretions agree, the arbitration tribunal may consist of a single arbitrator (having the qualifications referred to in Paragraph 3 above) chosen in accordance with the CPR Rules. Candidates for the arbitrator position(s) may be interviewed by representatives of the Parties in advance of their selection, *provided* that both parties are represented.

5. The parties agree to select the arbitrator(s) within [**] days after initiation of the arbitration. The hearing will be concluded within [**] days after selection of the arbitrator(s), and the determination (as provided in Paragraph 8 below) will be rendered within [**] days after the conclusion of the hearing, or of any post-hearing briefing, which briefing will be completed by both sides within [**] days after the conclusion of the hearing. In the event the parties cannot agree upon a schedule, then the arbitrator(s) shall set the schedule following the time limits set forth above as closely as practical.

6. The hearing will be concluded in [**] hearing days or less. Multiple hearing days will be scheduled consecutively to the greatest extent possible. A transcript of the hearing shall be made and shall be made available to the arbitrator(s) and each party.

7. The arbitrator(s) shall be guided, but not bound, by the then current *CPR Protocol on Disclosure of Documents and Presentation of Witnesses in Commercial Arbitration* (www.cpradr.org) ("***Protocol***"). The parties will attempt to agree on modes of document disclosure, electronic discovery, witness presentation, etc. within the parameters of the Protocol. If the parties cannot agree on discovery and presentation issues, the arbitrator(s) shall decide on presentation modes and provide for discovery guided by the Protocol, understanding that the parties contemplate reasonable discovery.

8. The arbitrator(s) shall determine the fraction, C/C+D, by which total Net Sales of a combination product that is the subject of the Allocation Dispute shall be multiplied (as contemplated under Section 4.4.5) in a country during the applicable royalty reporting period prior to calculation of the royalty to Harvard, where C is the relative contribution of value of the Licensed Product in such combination product and D is the relative contribution of value of the Other Active Components in such combination product. The arbitrator(s) shall decide the merits of any Allocation Dispute in accordance with the laws of the Commonwealth of Massachusetts, without application of any principle of conflict of laws that would result in reference to a different law. The arbitrator(s) may not apply principles such as "*amiable compositeur*" or "*natural justice and equity*."

9. The arbitrator(s) are expressly empowered to decide dispositive motions in advance of any hearing and shall endeavor to decide such motions as would a United States District Court Judge located in the District of Massachusetts. A determination shall be entered if a dispositive motion is granted that fully resolves the Allocation Dispute.

10. The arbitrator(s) shall render a written opinion stating the reasons upon which the determination is based. The parties irrevocably consent to the jurisdiction of any and all state and federal courts sitting in the Commonwealth of Massachusetts for the enforcement of the provisions of this Exhibit 4.4.5. Any other court with jurisdiction may act in the same fashion.

11. Rule 14 of the CPR Rules does not apply to this Agreement.

12. The parties shall share equally the cost of the arbitration by the arbitrator(s), and each party shall bear its own costs and attorneys' fees associated with the arbitration.

Exhibit 4.7

Success Payments

1. **Definitions**. Capitalized terms used in this Exhibit that are not otherwise defined in the Agreement to which this Exhibit is attached shall have the following meanings:

1.1. **"Affiliate"** means, with respect to a person, organization or entity, any person, organization or entity controlling, controlled by or under common control with, such person, organization or entity. For purposes of this definition only, "control" of another person, organization or entity will mean the possession, directly or indirectly, of the power to direct or cause the direction of the activities, management or policies of such person, organization or entity, whether through the ownership of voting securities, by contract or otherwise. Without limiting the foregoing, control will be presumed to exist when a person, organization or entity (a) owns or directly controls fifty percent (50%) or more of the outstanding voting stock or other ownership interest of the other organization or entity or (b) possesses, directly or indirectly, the power to elect or appoint fifty percent (50%) or more of the members of the governing body of the other organization or entity. The parties acknowledge that in the case of certain entities organized under the laws of certain countries outside of the United States, the maximum percentage ownership permitted by law for a foreign investor may be less than fifty percent (50%), and that in such cases such lower percentage will be substituted in the preceding sentence.

1.2. **"Fair Market Value"** [**].

1.3. **"Multiple of Initial Equity"** [**].

1.4. [**]

1.5. **"Success Payment Amount"** means the positive difference, if any between (A) the amount (in millions) set forth in the table in Section 2 of this Exhibit 4.7 set forth opposite the greatest Trigger Value that the Multiple of Initial Equity as of the [**] meets or exceeds, less (B) all payments that had previously been paid or become payable to Harvard in accordance with Section 2 on a prior [**].

1.6. **"Success Payment Date"** means (i) with respect to any Success Payment arising as a result of an [**], each such [**] (plus a [**] grace period at Licensee's option if Licensee is contemplating capital market transactions during the grace period such as a follow-on offering, provided that no grace period shall be available to Licensee as a result of a secondary offering with no primary offering component), (ii) with respect to any Success Payment arising as a result of a [**], the earlier of (a) the date on which any proceeds from the Licensee Sale are paid or distributed to any stockholder and (b) the date that is [**] days after the [**], (iii) with respect to any Success Payment arising as a result of a [**], the date that is [**] days after the [**] pursuant to which such Success Payment obligation arises, and (iv) with respect to any other Success Payment, the date that is the [**] pursuant to which such Success Payment obligation arises.

1.7. **[**]

1.8. **"Success Payment Value"** means, with respect to each share of [**] and as of any [**], the aggregate of (i) all dividends and other distributions (including the fair market value of non-cash distributions) made to the holders of [**] with respect to each such share on or before the [**] and (ii) the Fair Market Value of each such share of [**] (excluding any dividends and other distributions included under the foregoing clause (i)) as of such [**].

1.9. **[**]

2. **Success Payments**. [**]. If the Multiple of Initial Equity as determined with respect to such [**] is equal to or exceeds any of the values of the Multiple of Initial Equity set forth in the table below (the **"Trigger Values"**), Licensee shall notify Harvard within [**] calendar days of such [**] and pay to Harvard a payment equal to the Success Payment Amount. Such Success Payment Amount shall payable within [**] days of the Success Payment Date with respect to such Success Payment Amount, in cash or cash equivalents or, in the Licensee's sole discretion, in publicly tradable shares of the Licensee's common stock, or any combination thereof.

[**]	Success Payment (U.S. Dollars)
[**]	Five Million Dollars ($5,000,000)
[**]	[**]
[**]	[**]
[**]	[**]
[**]	One Hundred Five Million Dollars ($105,000,000)

Notwithstanding any termination of the [**], Licensee's obligation to pay the Success Payment Amount earned with respect to a transaction (taking account of all payments received under such transaction, including post-closing payments), shall survive such termination of the [**] until such payment has actually been made in full. Furthermore, notwithstanding any termination of the [**] or any other provision to the contrary herein, any post-closing payments will be aggregated with all prior payments made at the closing of the applicable transaction for purposes of determining the Success Payment Value and any Success Payment Amount due, with the Success Payment Value and the Success Payment Amount being recalculated as post-closing payments are received, and giving such post-closing payment the same weight in the calculation of the Success Payment Amount as payments that had already been received pursuant to the transaction as of its [**].

For purposes of this Section 2 of this Exhibit 4.7 (and the other provisions of this Section 2 to the extent necessary for the application or interpretation of the terms of this Section 2), the term **"Licensee"** shall include the term **"Acquirer."**

3. **Fair Market Value**. The Fair Market Value with respect to each share of [**] as of any [**] shall be determined as follows:

3.1. With respect to any Success Payment arising as a result of the [**], the **"Fair Market Value"** will be the average of the closing trading prices of a share of the common stock of Licensee over the consecutive [**] period ending on the applicable [**].

3.2. With respect to any [**] in which the sole consideration received for each share of [**] is cash, the **"Fair Market Value"** will be the cash received for each share of [**].

3.3. With respect to any [**] in which the consideration received for each share of [**] is other than solely cash, then the **"Fair Market Value"** shall be the cash, marketable securities, or other property received for each share of the Licensee's [**] in such transaction, determined as set forth below and in accordance with the Fair Market Value Methodology (as defined in Section 4.5 of this Exhibit 4.7).

4. **Notice of and Objection to Fair Market Value**.

4.1. Within [**] calendar days of the [**], Licensee shall deliver to Harvard a proposed Fair Market Value by written notice (the **"Licensee Notice"**), which notice shall include a description of the method used to calculate, and the details of the calculation of, such Fair Market Value. If Harvard does not object to such written notice by delivering written notice to Licensee of Harvard's objection within [**] calendar days (an **"Objection Notice"**), the Fair Market Value shall be the Fair Market Value proposed in such Licensee Notice. Within [**] calendar days of the delivery of such Objection Notice (the end of such [**] calendar day period being the **"Trigger Date"**), each of Harvard and Licensee shall consult with each other and attempt in good faith to agree upon a Fair Market Value with the Fair Market Value being the price so agreed in writing if agreement is reached within such time period.

4.2. If Harvard and Licensee fail to mutually agree on a Fair Market Value by the Trigger Date, then a person(s) selected in accordance with the provisions of Section 4.4 of this Exhibit 4.7, to act as an expert and not as an arbitrator (the **"Valuation Expert"**), at the expense of each of Harvard and Licensee in equal proportions, for the purpose of making the determination referred to here, with such Valuation Expert instructed to determine its independent estimate of the Fair Market Value (the **"Valuation Expert's Estimate"**) in accordance with the Fair Market Value Methodology within [**] calendar days after being appointed (it being understood that neither Party shall provide the Valuation Expert with its respective Fair Market Value Notices nor disclose to such Valuation Expert the contents thereof and that the Parties shall make available to such Valuation Expert access on a confidential basis to such books, accounts, records and forecasts as reasonably requested and believed to be necessary to determine the Fair Market Value).

4.3. The Fair Market Value shall then conclusively be deemed to equal the Valuation Expert's Estimate, and such value shall be final and binding on the Parties hereto (it being understood that for the avoidance of doubt no Party shall be able to contest the Valuation Expert's Estimate based on any claim of non-adherence to the Fair Market Value Methodology).

4.4. If Licensee and Harvard fail to mutually agree on a Valuation Expert within [**] calendar days of the Trigger Date, each of Licensee and Harvard shall, within [**] calendar days thereafter, appoint two independent public accountants (that shall each not be an Affiliate or service provider of any of Licensee or its Affiliates or Harvard at the time of arbitration), who shall try to mutually agree on a third party Valuation Expert. If such independent public accountants fail to mutually agree on such Valuation Expert within [**] calendar days from appointment, each of such independent public accountants shall appoint two additional independent public accountants within [**] calendar days, and the Valuation Expert will be selected from among the four (4) independent public accountants by drawing lots. The Success Payment Date will be extended by up to [**] calendar days if necessary to complete the process of designation of the Valuation Expert.

4.5. All Fair Market Value determinations set forth in any Fair Market Value Notice pursuant to this Exhibit 4.7 and all valuations estimated and/or determined by the Valuation Expert must adhere to the following requirements (the **"Fair Market Value Methodology"**):

4.5.1. subject to the below, be in accordance with industry standard valuation methodologies including but not limited to revenues, price-earnings ratio, free cash flow, EBITDA multiples or other appropriate metrics;

4.5.2. be, subject to Section 4.5.3 of this Exhibit 4.7, based on the actual historical results of the operations of Licensee as reflected on its audited and unaudited financial statements and reasonable forecasts of up to five (5) years assuming ordinary course of operations of Licensee consistent with past practice unless Licensee's results of operations show a loss for any portion of such period;

4.5.3. and for the avoidance of doubt, specifically, take into full account the working capital balances of Licensee and assume that any financial indebtedness or negative working capital balances of Licensee are paid off or offset in full with available cash (with the consequences or repayment or failure to offset with available cash transferred reflected as a degradation to the Fair Market Value).

Exhibit 10.5

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [**], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO BEAM THERAPEUTICS INC. IF PUBLICLY DISCLOSED.

LICENSE AGREEMENT

by and between

THE BROAD INSTITUTE, INC.

and

BLINK THERAPEUTICS INC.

May 9, 2018

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LICENSE AGREEMENT

This License Agreement (this "**Agreement**") is entered into as of this 9th day of May, 2018 (the "**Effective Date**"), by and between Blink Therapeutics Inc., a corporation existing under the laws of the State of Delaware, having a place of business at 325 Vassar St., Suite 2A, Cambridge, Massachusetts 02139 ("**Licensee**"), and the Broad Institute, Inc., a non-profit corporation existing under the laws of Massachusetts, having a place of business at 415 Main Street, Cambridge, MA 02142 ("**Broad**").

WHEREAS, the technology claimed in the Patent Rights (as defined below) was discovered and developed by researchers at Broad and the Institutions (as defined below);

WHEREAS, Broad, the Massachusetts Institute of Technology ("**MIT**", a not-for-profit Massachusetts Corporation with a principal place of business at 77 Massachusetts Avenue, Cambridge, Massachusetts 02139) and/or the President and Fellows of Harvard College ("**Harvard**", an educational and charitable corporation existing under the laws and the constitution of the Commonwealth of Massachusetts, having a place of business at Smith Campus Center, Suite 727, 1350 Massachusetts Avenue, Cambridge, Massachusetts 02138) are co-owners of certain of the Patent Rights set forth on Exhibit 1.117.

WHEREAS, pursuant to that certain Operating Agreement by and among Broad, MIT and Harvard, dated July 1, 2009, MIT and Harvard have authorized Broad to act as their sole and exclusive agent for the purposes of licensing their interest in the co-owned Patent Rights, and MIT and Harvard have authorized Broad to enter into this Agreement on their behalf with respect to such Patent Rights.

WHEREAS, the research was sponsored in part by the Federal Government of the United States of America and as a consequence this license is subject to overriding obligations to the Federal Government under 35 U.S.C. §§ 200-212 and applicable regulations;

WHEREAS, Licensee wishes to obtain a license under the Patent Rights;

WHEREAS, Broad and the Institutions desire to have products based on the inventions described in the Patent Rights developed and commercialized to benefit the public; and

WHEREAS, such products may be applicable to the improvement of the health of individuals throughout the world; and

WHEREAS, Licensee has represented to Broad, in order to induce Broad to enter into this Agreement, that Licensee shall commit itself to commercially reasonable efforts to develop, obtain regulatory approval for and commercialize such products, and thereafter make them available to the public.

NOW, THEREFORE, the Parties hereto, intending to be legally bound, hereby agree as follows:

1. Definitions.

As used in this Agreement, the terms with initial letters capitalized, whether used in the singular or plural form, shall have the meanings set forth in this Article 1 or, if not listed below, the meaning designated in places throughout this Agreement.

1.1 **"Abandoned Patent Rights"** shall have the meaning set forth in Section 6.4.1 (Abandonment by Licensee).

1.2 **"Achieved Milestone"** shall have the meaning set forth in Section 4.3.5 (Milestone Payments).

1.3 **"Acquirer"** shall have the meaning set forth in Section 4.9 (Assumption of Obligations).

1.4 **"Actual Series B Valuation Multiple"** means the number, not to exceed [**], determined by dividing the Series B Pre-Money by the Series A Post-Money.

1.5 **"Additional National Stage Filings"** shall have the meaning set forth in Section 6.1.4 (Control).

1.6 **"Additional Securities"** means shares of capital stock, convertible securities or warrants, options, or other rights to subscribe for, purchase or acquire from Licensee any capital stock of Licensee; provided that, "other rights to subscribe for, purchase or acquire" shall not include (i) preemptive or other rights to participate in new offerings of securities by Licensee after the Effective Date, (ii) obligations under a purchase agreement for preferred stock of Licensee to acquire additional shares of such preferred stock on the same terms as those purchased at an initial closing upon the passage of time or meeting (or waiver) of specified Licensee performance conditions or (iii) anti-dilution provisions that have not been triggered.

1.7 **"Affiliate"** means, with respect to a Person, organization or entity, any Person, organization or entity controlling, controlled by or under common control with, such Person, organization or entity. For purposes of this definition only, "control" of another Person, organization or entity will mean the possession, directly or indirectly, of the power to direct or cause the direction of the activities, management or policies of such Person, organization or entity, whether through the ownership of voting securities, by contract or otherwise. Without limiting the foregoing, control will be presumed to exist when a Person, organization or entity (a) owns or directly controls more than fifty percent (50%) of the outstanding voting stock or other ownership interest of the other organization or entity or (b) possesses, directly or indirectly, the power to elect or appoint more than fifty percent (50%) of the members of the governing body of the other organization or entity. The Parties acknowledge that in the case of certain entities organized under the laws of certain countries outside of the United States, the maximum percentage ownership permitted by law for a foreign investor may be less than fifty percent (50%), and that in such cases such lower percentage will be substituted in the preceding sentence.

Notwithstanding the foregoing definition, until the earlier of the consummation of a Change of Control of Licensee or [**] after the closing of the Initial Public Offering of securities of Licensee, (a) the Licensee's investors shall not be considered to be Affiliates of the Licensee for purposes of this Agreement and (b) portfolio companies owned in whole or in part by one or more of the Licensee's investors that have no legal connection to nor contract with the Licensee, and would not otherwise be Affiliates of Licensee but for being owned in whole or in part by one or more of the Licensee's investors, shall not be considered to be Affiliates of the Licensee for purposes of this Agreement. A portfolio company owned in whole or in part by the Licensee's investors or any of them that is not an Affiliate of the Licensee under the foregoing sentence and enters into a Sublicense agreement with Licensee shall not become an Affiliate of Licensee solely as a result of entering into such Sublicense agreement. A portfolio company that was not an Affiliate under the foregoing in this paragraph prior to [**] after the closing of the Initial Public Offering of securities of Licensee shall not become deemed an Affiliate of Licensee merely by the passage of time (i.e., they shall retain after such time-point their previous non-Affiliate-of-Licensee status for purposes of this Agreement, unless and until a new control relationship is formed (after such point in time) between Licensee and the applicable portfolio company).

1.8 **"Ag Product"** means any product comprising a plant, plant tissue, plant cell, plant part or plant seed, including any organism in the microbiome used in association with such plant, plant tissue, plant cell, plant part or plant seed, that is used for agricultural purposes.

1.9 **"Agreement"** shall have the meaning set forth in the preamble.

1.10 **"Alternative Agreement"** shall have the meaning set forth in Section 8.2 (Option Agreement).

1.11 **"Anti-Dilution Shares"** shall have the meaning set forth in Section 4.1.2 (Anti-Dilution Issuances).

1.12 **"Applicable Law"** means (a) with respect to a given jurisdiction, all applicable laws, rules and regulations (including any rules, regulations, guidelines or other requirements of any regulatory authorities) that may be in effect from time to time in such jurisdiction, and (b) with respect to any jurisdiction that does not have laws, rules or regulations that govern genetically modified organisms, all applicable laws, rules and regulations (including any rules, regulations, guidelines or other requirements of any regulatory authorities) of the United States federal government that may be in effect from time to time to the extent applicable to genetically modified organisms.

1.13 **"Bankruptcy Event"** means, with respect to any Person, any of the following:

1.13.1 such Person shall commence a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency or other similar law now or hereafter in effect or seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official of it or any substantial part of its property, or shall consent to any such relief or to the appointment of, or taking possession by, any such official in an involuntary case or other proceeding commenced against it, or shall make a general assignment for the benefit of creditors, or shall take any corporate action to authorize any of the foregoing;

1.13.2 an involuntary case or other proceeding shall be commenced against such Person seeking liquidation, reorganization or other relief with respect to it or its debts under any bankruptcy, insolvency or other similar law now or hereafter in effect or seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official of it or any substantial part of its property, and such involuntary case or other proceeding shall remain undismissed and unstayed for a period of sixty (60) days; or an order for relief shall be entered against such Person under the United States federal bankruptcy laws as now or hereafter in effect; or

1.13.3 a receiver or trustee shall be appointed with respect to such Person or all or substantially all of the assets of such Person.

1.14 **"Base Editor"** means [**].

1.15 **"Base Editor Patent Rights"** means any Patent Rights identified under the heading "Base Editor Patent Rights" in Exhibit 1.117 ("**Listed Base Editor Patent Rights**") and any Patent Rights that fall within any of clauses (b) through (f) of Section 1.117 ("Patent Rights") with respect to such Listed Base Editor Patent Rights. Certain Base Editor Patent Rights are further subcategorized as "REPAIR Base Editor Patent Rights" and "RESCUE Base Editor Patent Rights" in Exhibit 1.117 (each, a "**Sub-category of Base Editor Patent Rights**").

1.16 **"Base Editor Product"** [**].

1.17 **"Beam"** means Beam Therapeutics Inc., a Delaware corporation.

1.18 **"Beam Actual Series B Valuation Multiple"** means the number, not to exceed [**], determined by dividing the Beam Series B Pre-Money by the Beam Series A Post-Money.

1.19 **"Beam Change of Control"** means, with respect to Licensee, (a) a merger or consolidation of Licensee with Beam, (b) a transaction or series of related transactions in which Beam, together with its Affiliates (other than Licensee), becomes the owner of more than fifty percent (50%) of the combined voting power of Licensee's outstanding securities or (c) the sale, lease or other transfer to Beam of all or substantially all of Licensee's assets or business to which this Agreement relates.

1.20 **"Beam Proceeds Factor"** means a number, not more than [**], determined by dividing the gross proceeds to Beam from an applicable sale of Beam Series B Preferred Stock by [**].

1.21 **"Beam Series A Investors"** means F-Prime Capital Partners Healthcare Fund V, L.P. and ARCH Venture Fund IX, L.P., together with any other investors under common management with the foregoing.

1.22 **"Beam Series A Post-Money"** means an amount determined by multiplying (a) the weighted average price per share of the Beam Series A Preferred Stock sold by Beam to the Beam Series A Investors prior to the time of determination of the Beam Actual Series B Valuation Multiple by (b) the number of shares of outstanding capital stock of Beam on a Fully-Diluted Basis immediately prior to the first sale and issuance of Beam Series B Preferred Stock

(excluding for this purpose any securities issued in a bridge or similar financing that are convertible into, and are, at such first sale and issuance, converted into, Beam Series B Preferred Stock). For purposes of the foregoing, any shares of Beam Series A Preferred Stock that are deemed Beam Series B Preferred Stock by operation of the definition of Beam Series B Preferred Stock shall be excluded from the calculation of the weighted average price per share of the Beam Series A Preferred Stock for purposes of clause (a) and shall be deemed excluded from the number of shares of outstanding capital stock for purposes of clause (b).

1.23 **"Beam Series A Preferred Stock"** means Beam's Series A Preferred Stock, par value $0.0001 per share.

1.24 **"Beam Series B Pre-Money"** means an amount determined by multiplying (a) the weighted average price per share of Beam Series B Preferred Stock sold by Beam in a closing at the time of determination of the Beam Actual Series B Valuation Multiple (including in any such weighted average calculation any discount attributable to the conversion of the first up-to-$[**] in principal amount of debt securities issued in a bridge or similar financing that converted into Beam Series B Preferred Stock and excluding any other discount attributable to the conversion of such debt securities in excess of the first up-to-$[**] in principal amount) by (b) the number of shares of outstanding capital stock of Beam on a Fully-Diluted Basis immediately prior to such closing (excluding for this purpose any securities issued in a bridge or similar financing that are convertible into, and are, at such closing, converted into, Beam Series B Preferred Stock).

1.25 **"Beam Series B Preferred Stock"** means any series of preferred stock of Beam sold by Beam in a financing transaction other than Beam Series A Preferred Stock, provided that if Beam has sold $[**] of Beam Series A Preferred Stock, the term "Beam Series B Preferred Stock" shall include any additional shares of Beam Series A Preferred Stock sold by Beam.

1.26 **"Beam Valuation Factor"** means a number, not to exceed [**], determined by dividing the Beam Actual Series B Valuation Multiple by [**]; provided, however, that if the Beam Series B Preferred Stock sold by Beam that gives rise to an obligation by Licensee to make a payment under Section 4.3.2.3 (Series B Financing Following Beam Change of Control) is sold in a financing transaction in which the Beam Series A Investors, along with other investors who purchased Beam Series A Preferred Stock sold by Licensee prior to the time of determination of the Beam Actual Series B Valuation Multiple, purchase more than [**] percent ([**]%) of the Beam Series B Preferred Stock sold in such financing transaction, the Beam Valuation Factor shall be [**].

1.27 **"Bona Fide Proposal"** means a bona fide proposal for the research, development and commercialization of a [**] Proposed Product. A Bona Fide Proposal shall include, at a minimum, [**].

1.28 **"Broad"** shall have the meaning set forth in the preamble.

1.29 **"Broad Confidential Information"** shall have the meaning set forth in Section 11.1.1.1 (Definitions).

1.30 **"Broad Designee"** shall have the meaning set forth in Section 4.1.1 (Initial Issuance).

1.31 **"Calendar Quarter"** means each of the periods of three (3) consecutive calendar months ending on March 31, June 30, September 30 and December 31 during the Term.

1.32 **"Calendar Year"** means any twelve (12) month period commencing on January 1.

1.33 **"Cap Table"** shall have the meaning set forth in Section 4.1.4.1 (Representations and Warranties).

1.34 **"Challenging Party"** shall have the meaning set forth in Section 4.5.1 (Patent Challenge).

1.35 **"Change of Control"** means, with respect to Licensee, (a) a merger or consolidation of Licensee with a third party which results in the voting securities of Licensee outstanding immediately prior thereto ceasing to represent at least fifty percent (50%) of the combined voting power of the surviving entity immediately after such merger or consolidation, (b) a transaction or series of related transactions in which a third party, together with its Affiliates, becomes the owner or beneficial owner of more than fifty percent (50%) of the combined voting power of Licensee's outstanding securities other than through issuances by Licensee of securities of Licensee in a bona fide financing transaction or series of related bona fide financing transactions, or (c) the sale, lease or other transfer to a third party of all or substantially all of Licensee's assets or business to which this Agreement relates; provided that in no event shall a Beam Change of Control be deemed a Change of Control under this Agreement.

1.36 **"Claims"** shall have the meaning set forth in Section 9.1.1 (Indemnity).

1.37 **"Clinical Study"** means a Phase 1 Clinical Study, Phase 2 Clinical Study, Phase 3 Clinical Study, or such other study in humans that is conducted in accordance with good clinical practices and is designed to generate data in support or maintenance of an NDA or other similar application for Regulatory Approval (appropriate to the type of product candidate or product).

1.38 **"Collaboration Period"** shall have the meaning set forth in Section 2.5.13.5 (Limited-Time Preclusion of [**]).

1.39 **"Combination Product"** shall have the meaning set forth in Section 4.4.7 (Combination Products).

1.40 **[**]

1.41 **"Common Stock"** shall have the meaning set forth in Exhibit 4.1.

1.42 **"Competitor"** means any entity (a) listed in Exhibit 1.42 and (b) that, subject to Section 2.5.4 (Exceptions), is an Affiliate of and controlled by, as that term is used in the definition of Affiliate, (and not merely under common control with) an entity described under the foregoing clause (a). An entity that is a Competitor under the foregoing clause (b) shall only be deemed a Competitor for so long as such control exists. During the term, Licensee shall have the right to add up to [**] additional entities to Exhibit 1.42 upon prior written notice to Broad if (a) such entities are competitors in Base Editing technology generally and such entity's business is substantially dependent upon a Base Editing technology platform that such competitor owns or controls, and (b) with respect to such Base Editing technology platform, such entity holds a blocking patent position with respect to such technology's use for a particular class of Base Editors (generally, and not merely with respect to a particular [**]). Such notice must include an explanation, to Broad's reasonable satisfaction, as to how a proposed competitor meets the requirements set forth in the foregoing (a) and (b). After Licensee has added such [**] additional entities, Licensee may propose that [**] or more additional entities that meet the requirements set forth in the foregoing (a) and (b) be added to Exhibit 1.42, and such entity(ies) shall only be added to Exhibit 1.42 by mutual agreement of the Parties.

1.43 **"Confidential Information"** shall have the meaning set forth in Section 11.1.1.3 (Definitions).

1.44 **"Covered"** means, with respect to a given product, process, method or service, that a Valid Claim would (absent a license thereunder or ownership thereof) be infringed (whether directly infringed or indirectly by induced or contributory infringement) by the making, using, selling, offering for sale, importation or other exploitation of such product, process, method or service. With respect to a claim of a pending patent application, "infringed" refers to activity that would infringe or be covered by such Valid Claim if it were contained in an issued patent. Cognates of the word "Covered" shall have correlative meanings.

1.45 **"Cross Licenses"** shall have the meaning set forth in Section 1.111 ("Non-Royalty Sublicense Income").

1.46 **"Current Development Demonstration"** means a demonstration by Licensee of the research, development or commercialization of a Licensed Product, Enabled Product, Base Editor Product or DNA Cleaving Product in the Field [**] by Licensee or through any of its Affiliates, or with respect to a Sublicensee, a demonstration of the research, development or commercialization of a Royalty-Bearing Product in the [**]. Such demonstration shall require Licensee to [**].

1.47 **"Developing Country"** means any country identified as a low-income or lower-middle-income economy in the World Bank "Country and Lending Groups" classification.

1.48 **"Development Milestones"** means the development and regulatory milestones set forth in Exhibit 3.1.1 hereto.

1.49 **"Development Plan"** means the plan attached hereto as Exhibit 3.2.1 as such plan may be adjusted from time to time pursuant to this Agreement.

1.50 **"Direct License"** shall have the meaning set forth in Section 10.3.1 (Termination Rights).

1.51 **"Dispute"** shall have the meaning set forth in Section 11.8 (Dispute Resolution).

1.52 **"DNA Base Editor Product"** [**].

1.53 **"DNA Cleaver"** means [**].

1.54 **"DNA Cleaving Patent Rights"** means any Patent Rights identified under the heading "DNA Cleaving Patent Rights" in Exhibit 1.117 ("**Listed DNA Cleaving Patent Rights**") and any Patent Rights that fall within any of clauses (b) through (f) of Section 1.117 ("Patent Rights") with respect to such Listed DNA Cleaving Patent Rights.

1.55 **"DNA Cleaving Product"** [**].

1.56 **"Effective Date"** shall have the meaning set forth in the preamble.

1.57 **"Enabled Product"** means any product that (a) was made, discovered, developed or determined to have utility (i) through the use of any of the Patent Rights, provided that the research or discovery program in which such Patent Rights are used has commenced within [**] years following the Effective Date, or (ii) through the use of Transferred Materials and (b) is not a Licensed Product.

1.58 **"EU"** means the European Union.

1.59 **"EU Major Market Countries"** means the United Kingdom, Germany, Italy, France and Spain.

1.60 **"Executive Officers"** shall have the meaning set forth in Section 11.8 (Dispute Resolution).

1.61 **"Exempted Issuances"** means: shares of common stock issued or issuable, and options, warrants or other rights to purchase Common Stock sold, issued or issuable, by Licensee (i) to a corporation, partnership or other entity (other than a corporation, partnership or other entity that is an Affiliate (which definition for purposes of this Section 1.61 ("Exempted Issuances") shall be deemed to exclude the second paragraph of Section 1.7 ("Affiliate")) of Licensee) or to the shareholders of such corporation, partnership or other entity pursuant to the acquisition of such corporation, partnership or other entity by Licensee by merger, purchase of substantially all of the assets or similar transaction (but excluding any shares, options, warrants or other rights issued or issuable as incentive compensation); and (ii) to an academic institution, inventor, biopharmaceutical company, or intellectual property holding company (in each case, other than a corporation, partnership or other entity that is an Affiliate (which definition for purposes of this Section 1.61 ("Exempted Issuances") shall be deemed to exclude the second paragraph of Section 1.7 ("Affiliate")) of Licensee) in consideration of such Person's entering into a sponsored research, collaboration, technology or intellectual property license, development, OEM, marketing or other similar agreement with Licensee, including any such agreement entered into in settlement of litigation (but excluding any shares, options, warrants or other rights issued or issuable as incentive compensation); provided, however, that shares issued or issuable to an investor in Licensee in connection with any transaction contemplated under clause (i) or (ii) (other than shares issued to such investor as a shareholder of an entity as contemplated under clause (i)) shall not be Exempted Issuances.

1.62 **"Explanation"** shall have the meaning set forth in Section 3.5.1 (Notice/Explanation/Plan).

1.63 **"Failed Sub-Category of Base Editor Patent Rights"** shall have the meaning set forth in Section 3.1.2 (Sub-Categories of Patent Rights).

1.64 **"Failed Sub-Category of Patent Rights"** shall have the meaning set forth in Section 3.1.2.2 (Sub-Categories of Patent Rights).

1.65 **"FDA"** means the United States Food and Drug Administration.

1.66 **"Field"** means the prevention or treatment of human diseases by [**].

1.67 **"Financing Threshold"** means the earlier of (a) an aggregate total investment of [**] U.S. Dollars [**] in cash since the date of incorporation or formation of Licensee, in one or a series of related or unrelated transactions, in each case, in exchange for Licensee's capital stock and (b) the date of the consummation of a Beam Change of Control transaction.

1.68 **"First Commercial Sale"** means the date of the first sale by Licensee, its Affiliate or a Sublicensee of a Royalty-Bearing Product to a third party following receipt of any required Regulatory Approval in the country in which such Royalty-Bearing Product is sold, excluding, however, any sale or other distribution for use in a Clinical Study, charitable purposes, compassionate use or similar limited purposes.

1.69 **"FSFD"** means, with respect to a clinical study, the first dose of the first subject dosed in such clinical study.

1.70 **"Fully-Diluted Basis"** means, as of a specified date, the number of shares of common stock of Licensee then-outstanding plus the number of shares of common stock of Licensee issuable upon exercise or conversion of then-outstanding convertible securities or warrants, options, or other rights to subscribe for, purchase or acquire from Licensee any capital stock of Licensee (which shall be determined without regard to whether such securities or rights are then vested, exercisable or convertible) plus, without duplication, the number of shares reserved and available for future grant under any then-existing equity incentive plan of Licensee; provided that, for clarity, "other rights to subscribe for, purchase or acquire" shall not include (i) preemptive or other rights to participate in new offerings of securities by Licensee, (ii) obligations under a purchase agreement for preferred stock of Licensee to acquire additional shares of such preferred stock on the same terms as those purchased at an initial closing upon the passage of time or meeting (or waiver) of specified Licensee performance conditions or (iii) anti-dilution provisions that have not been triggered.

1.71 "[**]" shall have the meaning set forth in Section 2.5.13.2 ([**]).

1.72 "[**] **Inquiry**" shall have the meaning set forth in Section 2.5.13.4 ([**] Inquiry).

1.73 "[**] **Inquiry Date**" shall have the meaning set forth in Section 2.5.13.4 ([**] Inquiry).

1.74 "[**] **Notice**" shall have the meaning set forth in Section 2.5.13.4 ([**] Inquiry).

1.75 "[**] **Non-Performance Notice**" shall have the meaning set forth in Section 2.5.13.4 ([**] Inquiry).

1.76 "[**] **Selection Notice**" shall have the meaning set forth in Section 2.5.13.2 ([**]).

1.77 **[**] [**]

1.78 **"Gene Targeting Patent Rights"** means any Patent Rights identified under the heading "Gene Targeting Patent Rights" in Exhibit 1.117 ("**Listed Gene Targeting Patent Rights**") and any Patent Rights that fall within any of clauses (b) through (f) of Section 1.117 ("Patent Rights") with respect to such Listed Gene Targeting Patent Rights.

1.79 **"Generic/Biosimilar Product"** means, with respect to a Royalty-Bearing Product in a particular country, any pharmaceutical, biopharmaceutical (including gene therapies and cell therapies), or biologic product that: (a) (i) contains the same active pharmaceutical ingredient(s) as such Royalty-Bearing Product, and is approved by the Regulatory Authority in such country with the same or substantially the same labeling as such Royalty-Bearing Product for at least one indication in the Field or (ii) is approved by the Regulatory Authority in such country or jurisdiction as a substitutable generic or substitutable biosimilar for such Royalty-Bearing Product for an indication in the Field or otherwise is approved in a manner that relied on or incorporated data submitted by Licensee, its Affiliates or Sublicensees, in connection with the regulatory filings for such Royalty-Bearing Product, including through an ANDA or 505(b)(2) NDA, or any enabling legislation thereof, or any similar procedure provided for biosimilars or that may be applicable to gene therapy products in each case now or in the future; and (b) is sold in such country or jurisdiction by a third party that is not a Sublicensee or an Affiliate of Licensee, or a distributor of any of them. Any product or component thereof (including any Royalty-Bearing Product or component thereof) licensed, marketed, sold, manufactured or produced by Licensee or its Affiliates or Sublicensees, or any distributor of any of them, will *not* constitute a Generic/Biosimilar Product (but the identical product marketed by another third party is a Generic/Biosimilar Product if it falls within the definition thereof as set forth herein).

1.80 **"Harvard"** shall have the meaning set forth in the Recitals.

1.81 **"Human Germline Modification"** means human germline modification, including intentionally modifying the DNA of human embryos or human reproductive cells.

1.82 **"IND"** means an FDA Investigational New Drug application, or equivalent application or submission for approval to conduct human clinical investigations filed with or submitted to a Regulatory Authority in conformance with the requirements of such Regulatory Authority.

1.83 **"Indemnitees"** shall have the meaning set forth in Section 9.1.1 (Indemnity).

1.84 **"Indemnitor"** shall have the meaning set forth in Section 9.1.1 (Procedures).

1.85 **"Ineligible Sublicensees"** shall have the meaning set forth in Section 10.3.1 (Termination of Rights).

1.86 **"Infringement"** shall have the meaning set forth in Section 7.2 (Suit by Licensee).

1.87 **"Initial Public Offering"** or **"IPO"** means a firm-commitment underwritten public offering of equity securities by Licensee (or an Acquirer) or its (or their) Affiliate pursuant to an effective registration statement under the Securities Act of 1933, as amended (the "**Securities Act**").

1.88 **"Initiation of GLP Toxicology"** means the first dose in a non-human animal of a Royalty-Bearing Product in toxicology testing conducted in accordance with Good Laboratory Practices under the guidelines of 21 U.S. CFR.§ 58.1 et seq. (or its successor regulation) with the intention of using the results of toxicology testing in support of the filing of an IND for which other IND-enabling activities have been completed or are underway at the time of determination of "achievement of Initiation of GLP Toxicology".

1.89 **"Institution"** means each of Broad, Harvard and MIT individually, and "Institutions" means Broad, Harvard and MIT collectively.

1.90 **"Institution Names"** shall have the meaning set forth in Section 11.5 (Use of Name).

1.91 **"Licensed Product"** means on a country-by-country basis, (a) any product candidate or product the making, using, selling, offering for sale, importing or exporting of which in the country in question is Covered by at least one Valid Claim of the Base Editor Patent Rights or DNA Cleaving Patent Rights, or (b) any Base Editor Product the making, using, selling, offering for sale, importing or exporting of which in the country in question is Covered by at least one Valid Claim of the Gene Targeting Patent Rights.

1.92 **"Licensee"** shall have the meaning set forth in the preamble.

1.93 **"Licensee Confidential Information"** shall have the meaning set forth in Section 11.1.1.2 (Definitions).

1.94 **"Licensee Patents"** shall have the meaning set forth in Section 1.116 (Patent Challenge).

1.95 **"List of Countries"** shall have the meaning set forth in Section 6.1.4 (Control).

1.96 **"Listed Base Editor Patent Rights"** shall have the meaning set forth in Section 1.15 (Base Editor Patent Rights).

1.97 **"Listed DNA Cleaving Patent Rights"** shall have the meaning set forth in Section 1.54 (DNA Cleaving Patent Rights).

1.98 **"Listed Gene Targeting Patent Rights"** shall have the meaning set forth in Section 1.78 (Gene Targeting Patent Rights).

1.99 **"Litigation Expenses"** shall have the meaning set forth in Section 7.2.2 (Suit by Licensee).

1.100 **"Livestock Applications"** means (a) the modification or alteration of livestock, or of any products, cells or materials derived from livestock, or the use or provision of any processes, methods or services using livestock, or the use of any products, cells or materials derived from livestock, for the purposes of (i) affecting the fitness of such livestock, including affecting their ability to survive or reproduce, (ii) creating, expressing, transmitting, conferring, improving, or imparting a Trait of interest in such livestock, or (iii) bioproduction or bioprocessing, or (b) the use, production, alteration or modification of exotic animals, or of any products, cells, tissues or materials derived from exotic animals (including biomaterials derived from such exotic animals) in or for consumer goods or products. For the purposes of this definition, (A) "livestock" means (1) cattle, sheep, goats, buffalo, llamas, camels, swine, poultry and fowl (including egg-producing poultry and fowl), dogs, cats and equine animals, (2) animals used for food or in the production of food, (3) animals ordinarily raised or used on the farm or for home use, consumption, or profit, and (4) fish used for food, and (B) "exotic animals" means snakes, alligators, elephants, camels and other exotic animals but specifically excludes all rodents. Notwithstanding anything in this definition or elsewhere in this Agreement to the contrary, Livestock Applications does not include (i) the use of any animal or animal cell in preclinical research or (ii) the treatment of animal disease.

1.101 **"Loss of Market Exclusivity"** means, on a Royalty-Bearing Product-by-Royalty-Bearing Product, country-by-country, and Calendar Year-by-Calendar Year basis, that the following has occurred:

(a) the Net Sales of such Royalty-Bearing Product in such country in such Calendar Year are less than [**] percent ([**]%) of the average Net Sales of Royalty-Bearing Products in the [**] Calendar Quarters preceding the first marketing or sale of a Generic/Biosimilar Product to such Royalty-Bearing Product in such country;

(b) the decline in such Net Sales is attributable in material part to the marketing or sale in such country of a Generic/Biosimilar Product with respect to such Royalty-Bearing Product by a third party that is not a Sublicensee or a distributor of any of Licensee or its Affiliates or Sublicensees for the applicable Royalty-Bearing Product; and

(c) Such Generic/Biosimilar Product is being marketed and sold by such third party in the Calendar Year for which a determination of Loss of Market Exclusivity is being made.

1.102 **"Maintenance Fees"** shall have the meaning set forth in Section 4.2 (Annual License Maintenance Fees).

1.103 **"[**]"** has the meaning set forth in Section 2.5.12 ([**]).

1.104 **"[**] License"** has the meaning set forth in Section 2.5.11 ([**] License).

1.105 **"Milestone Deadline"** shall have the meaning set forth in Section 3.5.1 (Notice/Explanation/Plan).

1.106 **"Milestone Event"** means any milestone event indicated in Section 4.3.1 (Product Milestone Payments) or 4.3.2 (Financing Milestone Payments).

1.107 **"MIT"** shall have the meaning set forth in the Recitals.

1.108 "**Multi-Product Negotiation**" means, with respect to a [**] Proposed Product, a negotiation between Licensee and a Third Party involving [**] or more products that target [**] of which [**] such product targets the [**] as such [**] Proposed Product.

1.109 **"NDA"** means a New Drug Application filed with the FDA or an equivalent application to any Regulatory Authority (including a Biologics License Application, or BLA, or its foreign equivalent) requesting Regulatory Approval for a new product.

1.110 **"Net Sales"** means the gross amount billed or invoiced by or on behalf of Licensee, its Affiliates, and Sublicensees and any Affiliates of such Sublicensees (in each case, the "**Invoicing Entity**") or if not billed or invoiced the gross amount received by the Invoicing Entity, on sales, uses, leases or other transfers of Royalty-Bearing Products, less the following to the extent applicable with respect to such sales, leases or other transfers and not previously deducted from the gross invoice price: (a) customary trade, quantity or cash discounts to the extent actually allowed and taken (including discounts in the form of inventory management fees and chargebacks); (b) amounts actually repaid or credited by reason of rejection or return of any previously sold, leased or otherwise transferred Royalty-Bearing Products; (c) customer freight or insurance charges that are paid by or on behalf of the Invoicing Entity; (d) to the extent separately stated on purchase orders, invoices or other documents of sale, any sales, value added or similar taxes, custom duties or other similar governmental charges levied directly on the production, sale, transportation, delivery or use of a Royalty-Bearing Product that are paid by or on behalf of the Invoicing Entity, but not including any tax levied with respect to income; (e) rebates granted or given; and (f) a reasonable allowance for uncollectible accounts; provided that:

1.110.1 in any transfers of Royalty-Bearing Products between an Invoicing Entity and an Affiliate of such Invoicing Entity not for the purpose of resale by such Affiliate and not for use in a Clinical Study, charitable purposes, compassionate use or as free marketing samples provided in the customary course of the Invoicing Entity's business, Net Sales will be equal to the fair market value of the Royalty-Bearing Products so transferred, assuming an arm's length transaction made in the ordinary course of business;

1.110.2 in the event that (i) an Invoicing Entity receives non-cash consideration for any Royalty-Bearing Products, (ii) an Invoicing Entity sells Royalty-Bearing Product in a transaction not at arm's length with a non-Affiliate of an Invoicing Entity, or (iii) any Royalty-Bearing Product is sold by an Invoicing Entity at a discounted price that is substantially lower than the customary prices charged by Invoicing Entity, then Net Sales will be calculated based on the fair market value of such consideration or transaction, assuming an arm's length transaction made in the ordinary course of business, not to exceed the list price of the Royalty-Bearing Products in any event; and

1.110.3 with respect to any provision hereof requiring a calculation of fair market value, assuming an arm's length transaction made in the ordinary course of business, the Invoicing Entity may use the average price of the relevant Royalty-Bearing Product sold for cash during the relevant period in the relevant country.

Transfers of Royalty-Bearing Products by an Invoicing Entity to its Affiliate or a Sublicensee for resale by such Affiliate or Sublicensee or use in Clinical Studies, for compassionate use, or use as free marketing samples, will not be deemed Net Sales. Instead, if applicable, Net Sales will be determined based on the gross amount billed or invoiced by such Affiliate or Sublicensee upon resale of such Royalty-Bearing Products to a third party purchaser. Transfers of Royalty-Bearing Products by an Invoicing Entity for use in Clinical Studies, for compassionate use, or use as free marketing samples will not be deemed Net Sales unless such Invoicing Entity bills or invoices for such Royalty-Bearing Products, in which case, Net Sales will be determined based on the gross amount billed or invoiced by such Invoicing Entity upon transfer for such use.

In the event that Licensee enters into a Sublicense pursuant to which running royalties based on the net sales of a Royalty-Bearing Product are payable to Licensee and Licensee is unable to incorporate into such Sublicense the Net Sales definition hereunder, then Licensee may submit a request to Broad that the definition of net sales agreed upon in such Sublicense be deemed to apply to any amounts billed or invoiced by such Sublicensee under such Sublicense with respect to such Royalty-Bearing Products. In addition to such proposal, Licensee shall demonstrate to Broad's satisfaction, in Broad's sole discretion, that Broad would receive an amount of running royalties under such Sublicense applying such net sales definition equal to or greater than the amount of running royalties that Broad would otherwise receive under the definition of Net Sales hereunder. If Licensee makes such demonstration to Broad's satisfaction, then the net sales definition under such Sublicense shall be deemed to apply to royalty payments on Royalty-Bearing Products owed by Licensee to Broad with respect to such Sublicensee.

1.111 **"Non-Royalty Sublicense Income"** means all consideration received by Licensee or its Affiliates for a Sublicense such as license or distribution fees, milestone or option payments, or license maintenance fees, including any consideration received by Licensee under a Sublicense. Non-Royalty Sublicense Income specifically excludes the following:

1.111.1 payments to Licensee or an Affiliate by a Sublicensee under a Sublicense under the Patent Rights for the purpose of funding the costs of bona fide research and development or manufacture of Royalty-Bearing Products by the Licensee or its Affiliates to be conducted on or following the Effective Date of this Agreement and the effective date of such Sublicense, as specifically allocated in a research and development plan or manufacturing or commercial plan, as applicable, between Licensee or its Affiliate and the Sublicensee or as specifically described as such in the Sublicense;

1.111.2 if (i) Licensee enters into a Sublicense prior to the [**] anniversary of the Effective Date and (ii) no bona fide research, development or manufacturing costs of Royalty-Bearing Products under such Sublicense are specifically allocated as contemplated in Section 1.111.1 ("Non-Royalty Sublicense Income"), then Licensee may elect to exclude up to [**] percent ([**]%) of the upfront payment (or any series of payments that are intended to serve as an upfront (and not as an event-based milestone) and are only conditioned upon the passage of time and the Sublicense remaining in effect) received by Licensee or its Affiliates under such Sublicense from Non-Royalty Sublicense Income for the purpose of funding the costs of bona fide research, development or manufacturing by the Licensee or its Affiliates on or following the effective date of such Sublicense of Royalty-Bearing Products which are the subject of such Sublicense, provided that in such event (A) Licensee has until the [**] anniversary of the effective date of such Sublicense to use any such amounts excluded from the upfront payment for the research, development and manufacture of Royalty-Bearing Products under such Sublicense, (B) Licensee shall provide to Broad (x) promptly following the execution of such Sublicense, a proposed budget for its future research, development and manufacturing expenses for Royalty-Bearing Products under such Sublicense (as amended from time to time in accordance with this Agreement, the "**Proposed Budget**") and (y) within [**] days following each anniversary of the effective date of such Sublicense until the [**] anniversary of such Sublicense, a written report with a reasonably detailed accounting of all such research, development and manufacturing expenses for Royalty-Bearing Products under the Sublicense since the later of the effective date of such Sublicense and the last such report, and (C) if the amount excluded from Non-Royalty Sublicense Income exceeds Licensee's or its Affiliates' cumulative research, development and manufacturing expenses for Royalty-Bearing Products under such Sublicense as of the earlier of (x) the [**] anniversary of the effective date of such Sublicense and (y) the [**] date of the Proposed Budget, then the difference between the two (2) amounts shall be deemed Non-Royalty Sublicense Income as of such date, provided that if such difference is greater than [**] percent ([**]%) of such cumulative research, development and manufacturing expenses, then the difference shall be deemed Non-Royalty Sublicense Income as of the effective date of the applicable Sublicense and the late payment provisions of Section 5.4 (Late Payments) shall apply, and provided further that, prior to the [**] anniversary of the effective date of any Sublicense, Licensee may amend the Proposed Budget for such Sublicense by written notice to Broad, except that any extension of the term of the Proposed Budget past the [**] anniversary of the effective date of such Sublicense will not lengthen the period of time in which Licensee must, for the purposes of this Section 1.111.2 use any amounts excluded from the upfront payment for the research, development and manufacture of Royalty-Bearing Products under such Sublicense.

1.111.3 reimbursement for patent expenses as specifically allocated or specifically described as such in the Sublicense (including prosecution and enforcement expenses) paid to third parties at out-of-pocket cost to Licensee;

1.111.4 reimbursement of commercialization expenses, as specifically allocated or as specifically described as such in the Sublicense, of Licensee under a co-promotion arrangement at Licensee's cost (determined in accordance with U.S. generally accepted accounting principles consistently applied);

1.111.5 reimbursement of license, option, or other fees as specifically allocated or as specifically described as such in the Sublicense paid to third parties at out-of-pocket cost to Licensee;

1.111.6 proceeds from equity investments to the extent at fair market value, principal amount of loans to the extent not forgiven, and royalties on Net Sales of Royalty-Bearing Products; and

1.111.7 a percentage of any profit share for any product, to the extent such percentage does not exceed Licensee's and its Affiliates' percentage share contribution of the research, development and commercialization costs of such product following the effective date of the Sublicense (taking into consideration the geography for which the profit share is applicable and including share contributions by Licensee or its Affiliates in kind or through a reduction of future payments owed to Licensee or its Affiliates), and provided that for net sales on which such profit share is based running royalties are paid to Broad to the extent required in accordance with the terms of this Agreement.

To avoid doubt as to the calculation of Non-Royalty Sublicense Income, "equity investments to the extent at fair market value" means that only a premium over the fair market value of the security received for the equity investment (such fair market value being determined by reference to the price paid by a non-Sublicensee Third Party for the equivalent Licensee security (equal to such price wherever available) or by a reasonable methodology where such non-Sublicensee Third Party price is not available) would be included in Non-Royalty Sublicense Income, and if a loan is partially forgiven, then only the forgiven portion of the loan would be included in the Non-Royalty Sublicense Income.

In the event that non-cash consideration is received as Sublicense Income, Sublicense Income shall be calculated based on the fair market value of such non-cash consideration at the time of the transaction assuming an arm's length transaction made in the ordinary course of business. For clarity, a license of intellectual property rights that are necessary for Licensee to make, have made, use, have used, sell, offer for sale, have sold, export and import Royalty-Bearing Products, and other routine contractual covenants that do not involve the payment of any monetary consideration and are customary in the type of deal that the Sublicense is included in (including covenants providing for the research, development, supply, and commercialization responsibilities of the Sublicensee, confidentiality provisions, licenses or other rights or forbearances with respect to improvements and other technologies and intellectual property, retention of co-promotion rights or options to obtain co-promotion rights to the Royalty-Bearing Product(s) covered by such Sublicense, and indemnification) shall not be deemed non-cash consideration. For purposes of this Section 1.111.7 ("Non-Royalty Sublicense Income"), "all consideration received by Licensee or its Affiliates for a Sublicense" shall include all consideration received by Licensee or any of its Affiliates for any option, license, sublicense, standstill, covenant not to sue or other right granted under any other rights owned or controlled (for example, by virtue of a license granted by a third party) by Licensee or its Affiliate, or other agreement or arrangement entered into by Licensee or its Affiliate, in connection with a Sublicense. All rights relevant to making, using, selling, offering to sell or importing particular Royalty-Bearing Products to which a Sublicense relates shall be included in or deemed to be granted in connection with the Sublicense under which the rights granted to Licensee hereunder are sublicensed with respect to such Royalty-Bearing Products.

In addition, to the extent that Licensee enters into a cross-license with a Third Party to achieve freedom-to-operate for Royalty-Bearing Products while providing the Third Party with freedom-to-operate with respect to all or some portion of the Patent Rights ("**Cross Licenses**"), the non-economic value of the licenses to Licensee as part of such Cross License, and the other routine contractual covenants by other parties to such Cross License, shall not be deemed to give rise to Non-Royalty Sublicense Income for purposes of this Agreement. For clarity, any financial consideration that Licensee receives under such a Cross License shall be treated as Non-Royalty Sublicense Income under this Agreement.

In addition, no Beam Change of Control transaction, Change of Control transaction or other transaction giving rise to potential payments under Section 4.6 (Non-Royalty Sublicense Income) of this Agreement shall be deemed to be a Sublicense nor to give rise to Non-Royalty Sublicense Income.

1.112 **"Option Agreement"** shall have the meaning set forth in Section 8.2 (Option Agreement).

1.113 **"Other IP"** shall have the meaning set forth in Section 7.2 (Suit by Licensee).

1.114 **"Ownership Threshold"** shall have the meaning set forth in Section 4.1.2 (Anti-Dilution Issuances).

1.115 **"Party"** means Broad or Licensee and "**Parties**" means both of them.

1.116 **"Patent Challenge"** means any direct, or indirect through the actions of another acting on Licensee's, its Affiliate's, or a Sublicensee's behalf or upon its or their instruction, dispute or challenge, or any knowing, willful, or reckless assistance in the dispute or challenge by another, of the validity, patentability, scope, priority, construction, non-infringement, inventorship, ownership or enforceability of any Patent Right or any claim thereof, or opposition or assistance in the opposition of the grant of any letters patent within the Patent Rights, in any legal or administrative proceedings in a court of law, before the United States Patent and Trademark Office or other similar agency or tribunal in any jurisdiction, or in arbitration including, without limitation, by reexamination, *inter partes* review, opposition, interference, post-grant review, nullity proceeding, preissuance submission, third party submission, derivation proceeding or declaratory judgment action. For clarity, a Patent Challenge shall not include (1) arguments made by Licensee that (a) distinguish the inventions claimed in patents or patent applications owned or controlled by Licensee ("**Licensee Patents**") from those claimed in the Patent Rights but (b) do not disparage the Patent Rights or challenge the validity, scope, or enforceability of the Patent Rights' claims (excluding any claims that have been abandoned, lapsed, expired, or are otherwise no longer in force) under applicable patent laws, regulations or administrative rules, in each case (i) in the ordinary course of ex parte prosecution of the Licensee Patents or (ii) in *inter partes* proceedings before the United States Patent and Trademark Office or other agency or tribunal in any jurisdiction (excluding interferences or derivation proceedings), or in arbitration, wherein the Licensee Patents have been challenged; (2) arguments or assertions as to whether the Patent Rights Cover a given product, to the extent arising in a Suit brought by Broad; (3) Licensee payments of patent costs to another licensor or assignor of Licensee Patent Rights as required by the agreement under which the Licensee obtained rights to such patent rights, even if the licensor or assignor is engaging in behavior or presenting arguments that would themselves be considered a Patent Challenge if done by the Licensee; nor (4) Licensee being named as an essential party, real party in interest or other status similar to either of the foregoing, in an interference between Patent Rights and Licensee Patents or other adversarial proceeding similar to an interference.

1.117 **"Patent Rights"** means, in each case to the extent owned or controlled by Broad: (a) the patents and patent applications listed in Exhibit 1.117 (including the PCT or original direct national filing in any country, in each case, claiming priority to such application(s) listed in Exhibit 1.117 that are filed on such application(s)); (b) provisional applications not listed in Exhibit 1.117 but to which a nonprovisional application identified in (a) claims priority; (c) any patent or patent application that is a continuation or divisional (excluding continuation-in-part patents or patent applications except to the extent described in (e) below), or that is a reissue, renewal, reexamination, substitution or extension of any patent application identified in (a); (d) any patents issuing on any patent application identified in (a) or (c), including any reissues, renewals, reexaminations, substitutions or extensions thereof; (e) any claim of a continuation-in-part application or resulting patent (including any reissues, renewals, reexaminations, substitutions or extensions thereof) that is entitled to the priority date of, and is directed specifically to subject matter specifically described in, at least one of the patents or patent applications identified in (a); (f) any foreign counterpart (including PCTs) of any patent or patent application identified in (a) or (c) or of the claims identified in (e); and (g) any supplementary protection certificates, pediatric exclusivity periods, and other patent term extensions and exclusivity periods and the like of or based on any patents and patent applications identified in any of (a) through (f). For the avoidance of doubt, the Parties agree to amend this Agreement to add to Exhibit 1.117 such patents and applications identified in (b); provided, however, that any patent or patent application not so added to Exhibit 1.117 shall still be considered a Patent Right hereunder if it falls within (b).

1.118 **"Person"** means an individual, sole proprietorship, partnership, limited partnership, limited liability partnership, corporation, limited liability company, business trust, joint stock company, trust, unincorporated association, joint venture or other similar entity or organization, including a government or political subdivision, department or agency of a government.

1.119 **"Phase 1 Clinical Study"** means a clinical study in any country involving the initial introduction of an investigational new drug into humans, typically designed to determine the metabolism and pharmacologic actions of the drug in humans, the side effects associated with increasing doses, and, if possible, to gain early evidence on effectiveness. In the United States, **"Phase 1 Clinical Study"** means a human clinical study that satisfies the requirements of 21 C.F.R. § 312.21(a).

1.120 **"Phase 2 Clinical Study"** means a human clinical study in any country conducted to evaluate the effectiveness of a drug for a particular indication or indications in patients with the disease or condition under study and, possibly, to determine the common short-term side effects and risks associated with the drug. In the United States, **"Phase 2 Clinical Study"** means a human clinical study that satisfies the requirements of 21 C.F.R. § 312.21 (b).

1.121 **"Phase 3 Clinical Study"** means a human clinical study in any country, whether controlled or uncontrolled, that is performed after preliminary evidence suggesting effectiveness of the drug under evaluation has been obtained, and intended to gather the additional information about effectiveness and safety that is needed to evaluate the overall benefit-risk relationship of the drug and to provide an adequate basis for physician labeling. In the United States, **"Phase 3 Clinical Study"** means a human clinical study that satisfies the requirements of 21 C.F.R. § 312.21 (c).

1.122 **"Plan"** shall have the meaning set forth in Section 3.5.1 (Notice/Explanation/Plan).

1.123 **"**[******] **Period"** shall have the meaning set forth in Section 2.5.13 ([**]).

1.124 **"**[******]**"** shall have the meaning set forth in Section 2.5.13 ([**]).

1.125 **"Proceeds Factor"** means a number, not more than [**], determined by dividing the gross proceeds to Licensee from an applicable sale of Series B Preferred Stock by [**].

1.126 **"Process"** shall have the meaning set forth in Section 2.5.14 (Processing of Proposed Product Notices).

1.127 **"Product-Specific Base Editor Patent Rights"** means any Base Editor Patent Rights subcategorized as "Product-Specific Base Editor Patent Rights" in Exhibit 1.117.

1.128 **"Proposed Budget"** shall have the meaning set forth in Section 1.111.2 ("Non-Royalty Sublicense Income").

1.129 "[******]" shall have the meaning set forth in Section 2.5.13.2 ([**]).

1.130 **"Proposed Product Development Period"** shall have the meaning set forth in Section 2.5.5.2 (Proposed Product Development Period).

1.131 **"Proposed Product Extension Period"** shall have the meaning set forth in Section 2.5.14 (Processing of Proposed Product Notices).

1.132 **"Proposed Product Notice"** shall have the meaning set forth in Section 2.5.3 (Notice of [**] Proposed Product).

1.133 **"Proposed Product Notice Date"** shall have the meaning set forth in Section 2.5.3 (Notice of [**] Proposed Product).

1.134 **"Proposing Party"** shall have the meaning set forth in Section 2.5.3 (Notice of [**] Proposed Product).

1.135 **"Prosecution"** shall have the meaning set forth in Section 6.1 (Control).

1.136 **"Record Retention Period"** shall have the meaning set forth in Section 5.3 (Records).

1.137 **"Regulatory Approval"** means, with respect to a particular product or service, receipt of all regulatory clearances or approvals (which in the case of the EU may be through the centralized procedure) required in the jurisdiction in question for the sale of the applicable product or service in such jurisdiction, including receipt of pricing approval, if any, legally required for such sale.

1.138 **"Regulatory Authority"** means, in a particular country or jurisdiction, any applicable government regulatory authority involved in granting approvals for the clinical testing, manufacturing and marketing of a Royalty-Bearing Product in such country or jurisdiction, including, in the United States, the FDA.

1.139 **"Related Product"** means with respect to a Royalty-Bearing Product (the "reference Royalty-Bearing Product"), a Royalty-Bearing Product targeting (a) [**] and (b) (i) [**] or (ii) [**] whose alteration would have the same intended clinical outcome in the same intended patient population, in each case of clause (a), (b)(i) and (b)(ii) as the reference Royalty-Bearing Product.

1.140 **"REPAIR Base Editor Patent Rights"** means those Base Editor Patent Rights subcategorized as "REPAIR Base Editor Patent Rights" in Exhibit 1.117.

1.141 **"RESCUE Base Editor Patent Rights"** means those Base Editor Patent Rights subcategorized as "RESCUE Base Editor Patent Rights" in Exhibit 1.117.

1.142 **"Restored Licenses"** shall have the meaning set forth in Section 3.5.7 (Failure to Meet Development Milestone; Opportunity to Cure).

1.143 **"Restored Product"** shall have the meaning set forth in Section 3.5.7 (Failure to Meet Development Milestone; Opportunity to Cure).

1.144 **"Retained Product"** shall have the meaning set forth in Section 3.5.6.3 (Unmet Deadline).

1.145 **"Retained Product List"** shall have the meaning set forth in Section 3.5.6.3 (Unmet Deadline).

1.146 **"RNA Base Editor Product"** [**].

1.147 **"Royalty Term"** shall have the meaning set forth in Section 4.4.3 (Royalty Term).

1.148 **"Royalty-Bearing Product"** means any Licensed Product or Enabled Product.

1.149 **"Securities Act"** shall have the meaning set forth in Section 1.87 ("Initial Public Offering" or "IPO").

1.150 **[**]

1.151 **[**]

1.152 **"Selection Date"** shall have the meaning set forth in Section 2.5.13 ([**]).

1.153 **"Series A Investors"** means F-Prime Capital Partners Healthcare Fund V, L.P. and ARCH Venture Fund IX, L.P., together with any other investors under common management with the foregoing.

1.154 **"Series A Post-Money"** means an amount determined by multiplying (a) the weighted average price per share of the Series A Preferred Stock sold by Licensee to the Series A Investors prior to the time of determination of the Actual Series B Valuation Multiple by (b) the number of shares of outstanding capital stock of Licensee on a Fully-Diluted Basis immediately prior to the first sale and issuance of Series B Preferred Stock (excluding for this purpose any securities issued in a bridge or similar financing that are convertible into, and are, at such first sale and issuance, converted into, Series B Preferred Stock). For purposes of the foregoing, any shares of Series A Preferred Stock that are deemed Series B Preferred Stock by operation of the definition of Series B Preferred Stock shall be excluded from the calculation of the weighted average price per share of the Series A Preferred Stock for purposes of clause (a) and shall be deemed excluded from the number of shares of outstanding capital stock for purposes of clause (b).

1.155 **"Series A Preferred Stock"** means Licensee's Series A Preferred Stock, par value $0.0001 per share.

1.156 **"Series B Pre-Money"** means an amount determined by multiplying (a) the weighted average price per share of Series B Preferred Stock sold by Licensee in a closing at the time of determination of the Actual Series B Valuation Multiple (including in any such weighted average calculation any discount attributable to the conversion of the first up-to-$[**] in principal amount of debt securities issued in a bridge or similar financing that converted into Series B Preferred Stock and excluding any other discount attributable to the conversion of such debt securities in excess of the first up-to-$[**] in principal amount) by (b) the number of shares of outstanding capital stock of Licensee on a Fully-Diluted Basis immediately prior to such closing (excluding for this purpose any securities issued in a bridge or similar financing that are convertible into, and are, at such closing, converted into, Series B Preferred Stock).

1.157 **"Series B Preferred Stock"** means any series of preferred stock of Licensee sold by Licensee in a financing transaction other than Series A Preferred Stock, provided that if Licensee has sold $[**] of Series A Preferred Stock, the term "Series B Preferred Stock" shall include any additional shares of Series A Preferred Stock sold by Licensee.

1.158 **"Services Agreement"** shall have the meaning set forth in Section 8.3 (Services Agreement).

1.159 **"Shares"** shall have the meaning set forth in Section 4.1.1 (Initial Issuance).

1.160 **"Skipped Milestone"** shall have the meaning set forth in Section 4.3.5 (Milestone Payments).

1.161 **"Start Date"** means the period commencing on the Effective Date and ending on the second anniversary thereof.

1.162 **"Sub-Category Product Milestones"** means the Development Milestones identified under the heading "Sub-Category Product Milestones" in Exhibit 3.1.1.

1.163 **"Sub-Category of Base Editor Patent Rights"** shall have the meaning set forth in Section 1.15 ("Base Editor Patent Rights").

1.164 **"Sub-Category of Patent Rights"** means each Sub-Category of Base Editor Patent Rights and the DNA Cleaver Patent Rights.

1.165 **"Sublicense"** means: (a) any right (including any sublicense or covenant not to sue) granted by Licensee or any Sublicensee to any third party, under or with respect to or permitting any use or exploitation of any of the Patent Rights or otherwise permitting the development, manufacture, marketing, distribution, use or sale of Royalty-Bearing Products; (b) any option or other right granted by Licensee or any Sublicensee to any third party to negotiate for or receive any of the rights described under clause (a); or (c) any standstill or similar obligation undertaken by Licensee or any Sublicensee toward any third party not to grant any of the rights described in clause (a) or (b) to any other third party; in each case regardless of whether such grant of rights, option, standstill, or similar undertaking is referred to or is described as a sublicense.

1.166 **"Sublicensee"** means any Person or entity granted a Sublicense.

1.167 **"Subscription Agreement"** means a Subscription Agreement in the form attached hereto as Exhibit 4.1.

1.168 **"Suit"** shall have the meaning set forth in Section 11.9 (Governing Law and Jurisdiction).

1.169 **"**[**]**"** shall have the meaning set forth in Section 2.5.13 ([**]).

1.170 **"**[**]**"** shall have the meaning set forth in Section 2.5.13 ([**]).

1.171 **"Term"** means the term of this Agreement as set forth in Section 10.1 (Term).

1.172 **"Third Party"** or **"third party"** means an entity that is not Broad, an Institution, Licensee, or an Affiliate of Licensee.

1.173 **"**[**] Proposed Product"** means an actual or potential Licensed Product for use in the Field [**].

1.174 **"Transferred Materials"** means any protocols, data, materials or other information provided by or on behalf of Broad to Licensee or its Affiliates under an agreement between Licensee (or its Affiliate) and Broad (or its Affiliate) pursuant to which such protocols, data, materials or other information is specifically intended to be deemed "Transferred Materials" under this Agreement.

1.175 **"United States"** means the United States of America.

1.176 **"Valid Claim"** means: (a) a claim of an issued and unexpired patent within the Patent Rights that has not been (i) held permanently revoked, unenforceable, unpatentable or invalid by a decision of a court or governmental body of competent jurisdiction, unappealable or unappealed within the time allowed for appeal, (ii) rendered unenforceable through disclaimer, or (iii) permanently lost through an interference or opposition proceeding without any right of appeal or review, or not appealed or put in for review within the applicable statutory or regulatory period; or (b) a pending claim of a pending patent application within the Patent Rights that has not been (i) abandoned or finally rejected without the possibility of appeal or refiling or (ii) pending more than [**] years from the date of the first substantive office action on such pending patent application, provided such patent application is not pending more than [**] years from its earliest priority date. A pending claim that ceases to be a Valid Claim due to the foregoing time limit shall, if it later issues, qualify again as a Valid Claim, provided that it meets the requirements of clauses (a)(i)-(iii) of the foregoing definition.

1.177 **"Valuation Factor"** means a number, not to exceed [**], determined by dividing the Actual Series B Valuation Multiple by [**]; provided, however, that if the Series B Preferred Stock sold by Licensee that gives rise to an obligation by Licensee to make a payment under Section 4.3.2.2 (Series B Financing prior to Beam Change of Control) is sold in a financing transaction in which the Series A Investors, along with other investors who purchased Series A Preferred Stock sold by Licensee prior to the time of determination of the Actual Series B Valuation Multiple, purchase more than [**] percent ([**]%) of the Series B Preferred Stock sold in such financing transaction, the Valuation Factor shall be [**].

1.178 **"**[**]**"** shall have the meaning set forth in Section 4.8 (Success Payments).

2. License.

2.1 License Grants

2.1.1 Subject to the terms and conditions set forth in this Agreement, Broad hereby grants to Licensee (a) an exclusive, worldwide, royalty-bearing license, sublicensable solely in accordance with Section 2.4 (Sublicenses) below, under the Institutions' interests in (i) the Base Editor Patent Rights (other than the Product-Specific Base Editor Patent Rights) and DNA Cleaving Patent Rights, solely to make, have made, offer for sale, sell, have sold, and import Licensed Products, solely for use within the Field and (ii) the Product-Specific Base Editor Patent Rights solely to make, have made, offer for sale, sell, have sold, and import Licensed Products that are Base Editor Products, solely for use within the Field, and (b) a non-exclusive, royalty-bearing license, sublicensable solely in accordance with Section 2.4 (Sublicenses) below, under the Institutions' interests in (i) the Base Editor Patent Rights (other than the Product-Specific Base Editor Patent Rights) and DNA Cleaving Patent Rights, solely to make, have made, offer for sale, sell, have sold, and import Enabled Products solely for use within the Field and (ii) the Product-Specific Base Editor Patent Rights solely to make, have made, offer for sale, sell, have sold, and import Enabled Products that are Base Editor Products, solely for use within the Field.

2.1.2 Subject to the terms and conditions set forth in this Agreement, Broad hereby grants to Licensee an exclusive, worldwide, royalty-bearing license, sublicensable solely in accordance with Section 2.4 (Sublicenses) below, under the Institutions' interests in the Gene Targeting Patent Rights, solely to make, have made, offer for sale, sell, have sold, and import Licensed Products that are Base Editor Products, solely for use within the Field, and a non-exclusive, worldwide, royalty-bearing license, sublicensable solely in accordance with Section 2.4 (Sublicenses) below, under the Institutions' interests in the Gene Targeting Patent Rights solely to make, have made, offer for sale, sell, have sold, and import Enabled Products that are Base Editor Products solely for use within the Field.

2.1.3 Subject to the terms and conditions set forth in this Agreement, Broad hereby grants to Licensee a non-exclusive, worldwide, royalty-bearing license, sublicensable (through a single tier) solely in accordance with Section 2.4 (Sublicenses) below, under the Institutions' interest in the Patent Rights solely for internal research purposes; provided that, notwithstanding the foregoing, the license granted under this Section 2.1.3 (License Grants) excludes (a) Human Germline Modification (b) the stimulation of biased inheritance of particular genes or traits within a population of plants or animals and (c) the modification of the tobacco plan (including any plant part, plant cell, plant tissue or plant seed), except for modifications that (i) are related to the use of the tobacco plant as a manufacturing system or as a model system for research purposes but (ii) are not related to any use or application in the cultivation, growth, manufacture, exportation or production of any tobacco product. Notwithstanding the foregoing, in the event that Licensee has granted both a Sublicense of its rights under Section 2.1.1 (License Grants) or Section 2.1.2 (License Grants) and an internal research Sublicense under this Section 2.1.3 (License Grants), then such internal research Sublicense shall be sublicenseable through the same number of tiers as the Sublicense granted by Licensee pursuant to Section 2.1.1 (License Grants) or Section 2.1.2 (License Grants).

2.2 Reservation of Rights, Certain Restrictions. Notwithstanding anything herein to the contrary:

2.2.1 The Institutions retain the right for themselves and for other not-for-profit research organizations and government agencies to make, use, perform and practice the subject matter described or claimed in the Patent Rights for research, teaching, educational and scholarly purposes (including, but not limited to, the right to enter into projects permitted under 15 U.S.C. 3710a (the CRADA statute) or other sponsored research projects or collaborations whether or not such collaborations are formal or informal), in all fields in all territories at any time without restriction; provided, however, that sponsored research funded by a commercial entity shall be considered research for purposes of this Section 2.2.1 (Reservation of Rights, Certain Restrictions);

2.2.2 The Institutions and the United States federal government retain rights in the Patent Rights pursuant to 35 U.S.C. §§ 200-212 and 37 C.F.R. § 401 et seq., and any right granted in this Agreement greater than that permitted under 35 U.S.C. §§ 200-212 or 37 C.F.R. § 401 et seq. shall be subject to modification as may be required to conform to the provisions of those statutes and regulations. Licensee acknowledges that the United States federal government retains a royalty-free, non-exclusive, non-transferable license to practice any government-funded invention claimed in any Patent Right as set forth in 35 U.S.C. §§ 200-211 and the regulations promulgated thereunder, as amended, or any successor statutes or regulations.

2.2.3 In addition to the reservation of rights under Section 2.2.1 (Reservation of Rights, Certain Restrictions), the Institutions reserve the right for themselves and for any Third Party (including non-profit and for-profit entities), to research, develop, make, have made, use, offer for sale, sell, have sold, import or otherwise exploit the Patent Rights and Royalty-Bearing Products as research products or research tools, or for research purposes in the Field;

2.2.4 Licensee agrees that any Royalty-Bearing Products used or sold in the United States that are subject to 35 U.S.C. §§ 201-211 and the regulations promulgated thereunder, as amended, or any successor statutes or regulations thereto shall, to the extent required by law, be manufactured substantially in the United States; and

2.2.5 Broad retains the rights, for itself, and for the Institutions, where applicable, set forth in Section 2.5 (Inclusive Innovation Model), Section 3.5.1 (Notice/Explanation/Plan), Section 6.1.4 (Control), and Section 6.4 (Abandonment).

2.2.6 RESERVED

2.3 Affiliates. The licenses granted to Licensee under Section 2.1 (License Grants) include the right to have some or all of Licensee's rights or obligations under this Agreement exercised or performed by one or more of Licensee's Affiliates, solely on Licensee's behalf; provided, however, that:

2.3.1 Licensee shall notify Broad in writing in advance of any delegation to an Affiliate to exercise or perform any of Licensee's rights or obligations under this Agreement, and shall use reasonable efforts to so notify Broad within [**] days in advance of any such delegation;

2.3.2 prior to any Affiliate exercising or performing any of Licensee's rights or obligations under this Agreement, such Affiliate shall agree in writing with Licensee to be bound by the terms and conditions of this Agreement as if it were Licensee hereunder, including specific written agreement (a) to indemnify, defend and hold Indemnitees harmless, and carry insurance, under the same terms as Article 9 of this Agreement, and (b) that the Institutions are express third party beneficiaries of such writing; provided that nothing in this Section 2.3.2 (Affiliates) is intended to increase the payments (or the number of payments) to Broad under this Agreement (for non-limiting examples, an Affiliate agreeing to the terms and conditions of this Agreement as if it were Licensee hereunder shall not increase the number of times the milestone tables in Article 4 can be run and shall not give rise to additional Win State Payments);

2.3.3 no such Affiliate shall be entitled to grant, directly or indirectly, to any third party any right of whatever nature under, or with respect to, or permitting any use or exploitation of, any of the Patent Rights, including any right to develop, manufacture, market or sell Royalty-Bearing Products;

2.3.4 prior to any Affiliate exercising or performing any of Licensee's rights or obligations under this Agreement, such Affiliate shall agree in writing that it shall not practice the license under the Patent Rights for any uses prohibited by Section 2.7 (Additional Limitations on Exercise of License Rights) (except to the extent that the Licensee would have the right to do so after notice from Broad of a permitted application of such use);

2.3.5 any act or omission taken or made by an Affiliate of Licensee under this Agreement will be deemed an act or omission by Licensee hereunder, and Licensee shall be responsible for each of its Affiliates complying with all obligations of Licensee under this Agreement (including without limitation all restrictions placed on Licensee herein), to the extent applicable to such Affiliate; and

2.3.6 any assumption of rights or obligations by Affiliates of Licensee under this Agreement shall not relieve Licensee of any of its obligations under this Agreement.

2.4 Sublicenses.

2.4.1 Sublicense Grant. Licensee will be entitled to grant Sublicenses to third parties under the licenses granted pursuant to Section 2.1 (License Grants) subject to the terms of this Section 2.4 (Sublicenses). Any such Sublicense shall be on terms and conditions in compliance with and not inconsistent with the terms of this Agreement. Notwithstanding any Sublicense, Licensee shall remain primarily liable to Broad for all of Licensee's duties and obligations contained in this Agreement and any act or omission of a Sublicensee which would be a breach of this Agreement if performed by Licensee shall be deemed to be a breach by Licensee of this Agreement.

2.4.2 Sublicense Agreements. Licensee shall grant sublicenses pursuant to written agreements, which will be subject and subordinate to the terms and conditions of this Agreement. Such Sublicense agreements will contain, among other things, the following:

2.4.2.1 all provisions necessary to ensure Licensee's ability to perform its obligations under this Agreement;

2.4.2.2 a provision requiring the Sublicensee to comply with all terms and conditions of the Agreement applicable to Sublicensees under this Agreement, including Article 2 (License), 4.5 (Patent Challenge), 5.3 (Records), 5.3.2 (Audit of Sublicensees), 6.5 (Marking), 8.1 (Compliance with Law), Article 9 (Indemnification and Insurance), Sections 10.3.1 (Termination of Rights), 10.3.2 (Accruing Obligations), 11.1 (Confidentiality), 11.3 (Preference for United States Industry) and 11.5 (Use of Name);

2.4.2.3 a section requiring Sublicensee to indemnify, defend and hold Indemnitees harmless, and carry insurance, under the same terms set forth in Article 9 (Indemnification and Insurance) of this Agreement (which obligation to indemnify, defend, and hold harmless, to avoid doubt, may be limited to the activities under the Sublicense (*e.g.*, the Sublicensee shall not be required to indemnify for activities arising under other unrelated Sublicenses to unrelated Third Parties)), which also will state that the Indemnitees are intended third party beneficiaries of such Sublicense agreement for the purpose of enforcing such indemnification;

2.4.2.4 a statement that Broad is an intended third party beneficiary of such Sublicense to the extent such Sublicense relates to the sublicense of Patent Rights, solely for the purpose of enforcing all patent challenge, intellectual property ownership, indemnification and insurance and compliance with law provisions of such Sublicense, in each case applicable to the Patent Rights (or the practice thereof) and, with respect to

such indemnification and insurance provisions, Royalty-Bearing Products; and enforcing the right to terminate such Sublicense for breach of the patent challenge, indemnification (solely with respect to such Sublicensee's obligation to indemnify Broad) and insurance provisions of such Sublicense with respect to the Patent Rights (or the practice thereof) and, with respect to such indemnification and insurance provisions, Royalty-Bearing Products; and a statement that (a) each other Institution is an intended third party beneficiary of such Sublicense for the purpose of enforcing such Institution's rights, including indemnification and insurance provisions that relate to the Patent Rights (or the practice thereof) or Royalty-Bearing Products under such Sublicense, and (b) (1) that the rights of Broad or any Institution may be enforced by any Institution in any court of competent jurisdiction and, without limiting the generality of the foregoing, Sublicensee consents to jurisdiction in Massachusetts courts, and (2) notwithstanding the governing law selected for such Sublicense, the Sublicensee agrees that, in the event of any difference in interpretation or result as between the laws of the jurisdiction of such Sublicense and the laws of Massachusetts, the laws of Massachusetts shall control in any action in which Broad or any Institution is enforcing its rights under such Sublicense;

2.4.2.5 a provision stating that in the event Sublicensee or its Affiliate directly or indirectly brings, assumes, or participates in, or knowingly, willfully or recklessly assists in bringing, a Patent Challenge then Licensee shall be entitled to terminate the Sublicense;

2.4.2.6 a provision clarifying that, subject to Section 10.3.1 (Termination of Rights), in the event of termination of the licenses set forth in Section 2.1 (License Grants) (in whole or in part (*e.g.*, as to one license or the other, or termination in a particular country)), any existing Sublicense agreement shall terminate to the extent of such terminated license;

2.4.2.7 a provision prohibiting the Sublicensee from sublicensing its rights under such Sublicense agreement through more than [**] additional tiers, provided that such further Sublicense also shall comply with the terms of this Section 2.4 (Sublicenses);

2.4.2.8 a provision requiring the Sublicensee to notify Licensee of the achievement of each milestone described in Section 4.3.1 (Product Milestone Payments) in accordance with the timeframes set forth in Section 4.3.3 (Milestone Payments);

2.4.2.9 a provision requiring the Sublicensee to comply with Section 8.1 (Compliance with Laws) and Section 11.5 (Use of Names) of this Agreement;

2.4.2.10 a provision requiring the Sublicensee to agree that it shall not use the Patent Rights for Human Germline Modification; and

2.4.2.11 a provision prohibiting the Sublicensee from assigning the Sublicense agreement without the prior written consent of Broad, except that Sublicensee may assign the Sublicense agreement to (a) its Affiliate or (b) a successor in connection with the merger, consolidation or sale, lease or other transfer of all or substantially all of its assets or that portion of its business to which the Sublicense agreement relates; provided, however, that any permitted assignee agrees in writing to be bound by the terms of such Sublicense agreement.

2.4.3 Delivery of Sublicense Agreement. Licensee shall furnish Broad with a fully executed copy of any Sublicense agreement promptly after its execution, provided that Licensee shall have no obligation to provide Broad with a copy of a Sublicense agreement between Licensee or a Sublicensee, on the one hand, and an Affiliate of Licensee or such Sublicensee or a contract research organization or contract manufacturing organization (solely for the provision of services under such Sublicense), on behalf of Licensee or such Sublicensee under this Agreement, on the other hand. All Sublicenses shall be the Confidential Information of Licensee. Broad shall keep all such copies in its confidential files and shall use them solely for the purpose of monitoring Licensee's and Sublicensees' compliance with their obligations hereunder and enforcing Broad's rights under this Agreement. Licensee shall be entitled to redact proprietary non-public information of Licensee or the applicable Sublicensee or research plans under the Sublicense to the extent not reasonably required for Broad to monitor Licensee's and Sublicensee's compliance with their obligations under the applicable Sublicense and this Agreement and for Broad to enforce its rights under this Agreement. Licensee shall not redact any information [**] for Broad to evaluate and confirm compliance of such Sublicense with the terms and conditions of this Agreement.

2.4.4 Termination for Breach by Sublicensee. Any act or omission of a Sublicensee which would be a breach of this Agreement if performed by Licensee shall be deemed to be a breach by Licensee of this Agreement. Without limiting any other rights or remedies available to Broad, it is understood that if (a) Licensee cures such breach in accordance with Section 10.2.2 (Termination for Default) or (b) Licensee uses commercially reasonable efforts to cure such breach in accordance with Section 10.2.2 (Termination for Default) and terminates the applicable Sublicense, then Broad shall not be entitled to terminate this Agreement for the breach by the Sublicensee even if it resulted in a material breach of this Agreement.

2.5 Inclusive Innovation Model.

2.5.1 General. If a Third Party inquires with Broad for a license under the Base Editor Patent Rights (other than Product-Specific Base Editor Patent Rights) or DNA Cleaving Patent Rights with respect to products for use in the Field or for a license under the Gene Targeting Patent Rights or Product-Specific Base Editor Patent Rights with respect to Base Editor Products for use in the Field, in each case while this Agreement is in effect, Broad may refer such Third Party to Licensee to seek a potential Sublicense.

2.5.2 Start Date. Notwithstanding anything to the contrary in this Agreement, Sections 2.5.3 (Proposed Product Notice) through 2.5.13 ([**]) shall apply only from and after the second (2nd) anniversary of the Effective Date ("**Start Date**"). Prior to Start Date, Broad shall have no right to invoke such Sections.

2.5.3 Proposed Product Notice. If after the Start Date a Third Party that is not a Competitor (a "**Proposing Party**") makes a Bona Fide Proposal to Broad for developing what Broad reasonably believes is a [**] Proposed Product that is Covered by the Base Editor Patent Rights (other than the Product-Specific Base Editor Patent Rights) or DNA Cleaving Patent Rights or, to the extent such [**] Proposed Product is a Base Editor Product, is additionally or alternatively Covered by the Gene Targeting Patent Rights or Product-Specific Base Editor Patent Rights, and Broad is interested in having such [**] Proposed Product developed and commercialized, Broad may notify Licensee of the Third Party's Bona Fide Proposal and shall include in such notification the identity of the Proposing Party and the identity of the applicable [**] to which the [**] Proposed Product is directed (such notice, the "**Proposed Product Notice**," and the effective date of such notice in accordance with Section 11.7, the "**Proposed Product Notice Date**"). [**].

2.5.4 Exceptions. If the Proposing Party's proposal does not meet the definition of Bona Fide Proposal or the proposed product is not a [**] Proposed Product, each as determined in Broad's reasonable discretion, or the Third Party is a Competitor or becomes a Competitor during the Proposed Product Development Period, then Sections 2.5.5 ([**] Proposed Product Options) through 2.5.13 ([**]) shall not apply (and without limiting the generality of the foregoing Broad shall have no right to grant a [**] License to such Third Party with respect to such [**] Proposed Product nor to require that Licensee grant a Sublicense or provide a development plan and development milestones in relation thereto). Notwithstanding the foregoing, if Licensee reasonably believes such Third Party is a Competitor under Section 1.42(b) (Competitor), then, promptly after the Proposed Product Notice Date, Licensee shall notify Broad and such notice shall include an explanation, to Broad's reasonable satisfaction, as to how such Third Party is an Affiliate controlled by (and not merely under common control with) an entity described under Section 1.42(a) (Competitor). If Licensee provides such notice to Broad's reasonable satisfaction, then Sections 2.5.5 ([**] Proposed Product Options) through 2.5.13 ([**]) shall not apply. For clarity, if a Third Party becomes a Competitor after the Proposed Product Development Period for a given [**] Proposed Product, Broad's right to grant or have granted a [**] License, and any [**] License already granted by Broad, to such Third Party with respect to such [**] Proposed Product will not be affected, provided that, going forward, if such Third Party remains a Competitor, then such Third Party will be ineligible to be considered a Proposing Party under Section 2.5.3 (Proposed Product Notice).

2.5.5 [**] Proposed Product Options.

2.5.5.1 Notice to Broad. Within [**] days of the Proposed Product Notice Date, Licensee may either (a) provide a Current Development Demonstration to Broad in accordance with Section 2.5.6 (Existing Development or Commercialization), or (b) notify Broad as to whether it (i) has a good faith interest in researching, developing and commercializing the [**] Proposed Product itself in accordance with Section 2.5.7 (Intended Development or Commercialization), (ii) has a good faith interest in entering into a Sublicense with the Proposing Party to research, develop and commercialize the [**] Proposed Product in accordance with Section 2.5.8 (Proposing Party Development or Commercialization), (iii) has a good faith interest in entering into a Sublicense with another Third Party to research, develop and commercialize the [**] Proposed Product in accordance with Section 2.5.9 (Third Party Development or Commercialization), or (iv) does not wish to pursue the foregoing (a), (b)(i), (b)(ii) or (b)(iii). For clarity, Licensee may notify Broad at any time that it is no longer interested in developing such [**]

Proposed Product under either (a), (b)(i), (b)(ii) or (b)(iii). As part of the notice to Broad under this Section 2.5.5.1 (Notice to Broad), Licensee shall also confirm whether, in the [**] months prior to the Proposed Product Notice Date, Licensee (or an Affiliate of Licensee) is already negotiating or has already negotiated with the Proposing Party to research, develop or commercialize the applicable [**] Proposed Product, and the length of time and nature of such negotiations (e.g., whether there has been active and consistent dialogue with the applicable counter-party, the exchange of terms and conditions, etc.).

2.5.5.2 Proposed Product Development Period. If Licensee so notifies Broad under (b)(i), (b)(ii) or (b)(iii) of Section 2.5.5.1 (Notice to Broad), Licensee shall have [**] months from the Proposed Product Notice Date to prepare a development plan and commence activities thereunder with respect to such [**] Proposed Product in accordance with Sections 2.5.7 (Intended Development or Commercialization), 2.5.8 (Proposing Party Development or Commercialization), or 2.5.9 (Third Party Development or Commercialization), as applicable, (such [**] month period, the "**Proposed Product Development Period**"). [**] months into the Proposed Product Development Period, Licensee shall provide to Broad a good faith update as to the progress of such plan, including whether Licensee intends to use the remaining [**] months of the Proposed Product Development Period to continue to develop such plan and commence activities thereunder. The Proposed Product Development Period for a given [**] Proposed Product shall be reduced by the length of time of active negotiations between Licensee and the Proposing Party in the [**] months prior to the Proposed Product Notice Date to research, develop or commercialize the applicable [**] Proposed Product, provided that such reduction shall not be greater than [**] months and provided further that only active negotiations regarding a transaction specific to such [**] Proposed Product (and not a class or type of products generally or a Multi-Product Negotiation) shall be offset from Licensee's Proposed Product Development Period. In the event that the Parties are unable to agree as to whether Licensee has been engaged in active negotiations, or the length of time of such active negotiations, then the matter shall be resolved in accordance with Exhibit 4.4.7, provided that any final determination of the applicable arbitrator(s) shall not be deemed to extend (a) the Proposed Product Development Period beyond [**] months, or (b) the reduction to such Proposed Product Development Period for active negotiations beyond [**] months. Further, the Proposed Product Development Period shall apply on a Proposed Product Notice-by-Proposed Product Notice basis, and shall be no longer than [**] months (subject to the foregoing sentence with respect to a reduction of up to [**] months for prior negotiations by Licensee). By way of example, if Licensee has actively negotiated for [**] months with a Proposing Party pursuant to Section 2.5.8 (Proposing Party Development or Commercialization) prior to the applicable Proposed Product Notice Date, then the applicable Proposed Product Development Period shall be reduced by [**] months, and Licensee shall have [**] months remaining in which to develop a plan pursuant to Section 2.5.7 (Intended Development or Commercialization) or negotiate a Sublicense pursuant to Section 2.5.8 (Proposing Party Development or Commercialization) or Section 2.5.9 (Third Party Development or Commercialization). By way of further example, if Licensee has [**] months remaining of the applicable Proposed Product Development Period but Licensee ceases its ongoing negotiations with [**] months remaining to negotiate a Sublicense with an alternative Third Party, then Licensee shall have no more than [**] months within which to negotiate such Sublicense pursuant to Section 2.5.8 (Proposing Party Development or Commercialization) or Section 2.5.9 (Third Party Development or Commercialization).

2.5.6 Existing Development or Commercialization. If the [**] Proposed Product is directed to a [**] for which the Licensee, directly or through any of its Affiliates or Sublicensees, is currently researching, developing or commercializing a Licensed Product, Enabled Product, Base Editor Product or DNA Cleaving Product in the Field, then Licensee may, within [**] days of the Proposed Product Notice Date, provide a Current Development Demonstration to Broad. Thereafter, Licensee shall continue to use commercially reasonable efforts, itself or through its Affiliate or Sublicensee to continue to implement such plan. Licensee shall provide a written report to Broad describing Licensee's progress under the applicable plan at least [**] until the First Commercial Sale of such Licensed Product, Enabled Product, Base Editor Product or DNA Cleaving Product. Licensee may, on an [**] basis concurrently with the delivery of each [**] diligence report to be provided by Licensee to Broad under Section 3.4 (Reporting) hereof, make commercially reasonable adjustments to the applicable research, development or commercialization plan as necessary to improve Licensee's ability to meet its obligations under such plan; provided that, such adjustments shall be subject to review and approval by Broad, such approval not to be unreasonably withheld, conditioned or delayed.

2.5.7 Intended Development or Commercialization. If Licensee notifies Broad within [**] days of the Proposed Product Notice Date that Licensee or its Affiliate is interested in developing a Licensed Product, Enabled Product, Base Editor Product or DNA Cleaving Product directed to the [**] as such [**] Proposed Product in the Field, then within the Proposed Product Development Period, Licensee shall be required to (a) prepare, or have prepared, a commercially reasonable research, development or commercialization plan, similar to the Development Plan with respect to other Licensed Products developed by Licensee in the Field, subject to necessary adjustments and including reasonable development milestones, at least [**] preclinical development milestone and associated timelines, and including evidence that Licensee or its applicable Affiliate or Sublicensee has, or reasonably expects to have, access to any intellectual property (other than any intellectual property owned or controlled by the Proposing Party) that would be necessary to develop and commercialize such Licensed Product, Enabled Product, Base Editor Product or DNA Cleaving Product and has, or reasonably expects to have, funding available to advance such plan and (b) commence, or have commenced on its behalf, research or development activities for such Licensed Product, Enabled Product, Base Editor Product or DNA Cleaving Product in the Field pursuant to such plan. Licensee's failure to prepare or have prepared a plan as described in clause (a) of the preceding sentence or to commence or have commenced research or development activities as described in clause (b) of the preceding sentence shall, in each case, not constitute a material breach of this Agreement; provided, however that, in addition to Broad having the right to grant a [**] License to the extent permitted in Section 2.5.11 ([**] License), following each such failure and solely for the subsequent [**] Proposed Product which Licensee elects to develop under Section 2.5.7 (Intended Development or Commercialization), Section 2.5.8 (Proposing Party Development or Commercialization), or Section 2.5.9 (Third Party Development or Commercialization), and for which at least [**] months of the Proposed Product Development Period for such [**] Proposed Product remain following any applicable reductions pursuant to Section 2.5.5.2 (Proposed Product Development Period), Broad shall be entitled to reduce by [**] months the Proposed

Product Development Period; provided further that, for clarity, the right to reduce the applicable Proposed Product Development Period pursuant to this sentence shall apply following each such failure to prepare such a plan or commence or have commenced such research or development activities. Broad's rights with respect to a [**] License set forth in Section 2.5.11 ([**] License), [**] for a failure under the foregoing sentence that results in a diligence failure pursuant to Section 3.5.6.2 (Unmet Deadline), as applicable, and Broad's right to reduce a Proposed Product Development Period pursuant to the preceding sentence shall be Broad's sole and exclusive remedies under law and this Agreement for any failure by Licensee to prepare such a plan or commence or have commenced such research or development activities as described in the preceding sentence. In the discussion of such development plan and development milestones, Broad shall not unreasonably withhold its consent to Licensee's proposed plan. If the Parties agree on such development plan and milestones and Licensee or its Affiliate commences research or development activities thereunder within the Proposed Product Development Period, Licensee shall maintain its exclusive license(s) hereunder with respect to such [**] Proposed Product in the Field, but shall be obligated (i) to, itself or through its Affiliate or Sublicensee, use commercially reasonable efforts to develop and commercialize the Licensed Product, Enabled Product, Base Editor Product or DNA Cleaving Product in the Field in accordance with such new development plan (which shall be incorporated into and be part of the "Development Plan" for all purposes hereunder) and (ii) to, itself or through its Affiliate or Sublicensee, meet the development milestones on the timeline associated therewith with respect to the Licensed Product, Enabled Product, Base Editor Product or DNA Cleaving Product in the Field (which shall be a "Development Milestone" for all purposes hereunder) in the Field (subject to extension in the same manner as provided in Sections 3.5.1 (Notice/Explanation/Plan) through 3.5.5 (Plan Discussions) applied *mutatis mutandis*), and (iii) provide a written report to Broad describing Licensee's progress under such plan at least [**] until the First Commercial Sale of such Licensed Product, Enabled Product, Base Editor Product or DNA Cleaving Product. Exhibit 3.1.1 shall be amended to reflect such development milestones and timeline with respect to such Licensed Product, Enabled Product, Base Editor Product or DNA Cleaving Product. Licensee may, on an [**] basis concurrently with the delivery of each [**] diligence report to be provided by Licensee to Broad under Section 3.4 (Reporting) hereof, make such commercially reasonable adjustments to the applicable plan as necessary to improve Licensee's ability to meet its research, development or commercialization obligations under such plan; provided that such adjustments shall be subject to review and approval by Broad, such approval not to be unreasonably withheld, conditioned or delayed.

2.5.8 Proposing Party Development or Commercialization. If, within [**] days of the Proposed Product Notice Date, Licensee notifies Broad that Licensee is not interested in developing such [**] Proposed Product in the Field but that it wishes to grant a Sublicense to the Proposing Party to develop a Royalty-Bearing Product directed to the [**] as such [**] Proposed Product in the Field, Licensee will have until the end of the Proposed Product Development Period to (a) negotiate and enter into such a Sublicense agreement with such Proposing Party, (b) prepare, or have prepared, together with the Proposing Party, a commercially reasonable research, development or commercialization plan similar to the Development Plan with respect to other Licensed Products developed by Licensee in the Field, subject to necessary adjustments and including reasonable development milestones, at least [**] preclinical development milestone and associated timelines, and including evidence that Licensee or its applicable Affiliate or Sublicensee or the Proposing Party have, or reasonably

expects to have, access to any intellectual property that would be necessary to develop and commercialize such Royalty-Bearing Product in the Field and has, or reasonably expects to have, funding available to advance such plan and (c) commence research or development activities with the Proposing Party for such Royalty-Bearing Product pursuant to such plan. In the discussion of such development plan and development milestones, Broad shall not unreasonably withhold its consent to Licensee's proposed plan. If the Parties agree on such development plan and milestones and research or development activities thereunder are commenced by or on behalf of the Licensee or the Proposing Party within the Proposed Product Development Period, Licensee shall maintain its exclusive license(s) hereunder with respect to such [**] Proposed Product in the Field, but shall be obligated (i) to, itself or through its Affiliate or Sublicensee (including the Proposing Party), use commercially reasonable efforts to develop and commercialize the Royalty-Bearing Product in the Field in accordance with such new development plan (which shall be incorporated into and be part of the "Development Plan" for all purposes hereunder) and (ii) to, itself or through its Affiliate or Sublicensee (including the Proposing Party) meet the development milestones on the timeline associated therewith with respect to the Royalty-Bearing Product (which shall be a "Development Milestone" for all purposes hereunder) in the Field (subject to extension in the same manner as provided in Sections 3.5.1 (Notice/Explanation/Plan) through 3.5.5 (Plan Discussions) applied *mutatis mutandis*), and (iii) provide a written report to Broad describing Licensee's and the Proposing Party's progress under such plan at least [**] until the First Commercial Sale of such Royalty-Bearing Product. Exhibit 3.1.1 shall be amended to reflect such development milestones and timeline with respect to such Royalty-Bearing Product. Licensee may, on an [**] basis concurrently with the delivery of each [**] diligence report to be provided by Licensee to Broad under Section 3.4 (Reporting) hereof, make such commercially reasonable adjustments to the applicable plan as necessary to improve Licensee's ability to meet its research, development or commercialization obligations under such plan; provided that such adjustments shall be subject to review and approval by Broad, such approval not to be unreasonably withheld, conditioned or delayed.

2.5.9 Third Party Development or Commercialization. In parallel with, or in lieu of, seeking to Sublicense a Royalty-Bearing Product to the Proposing Party, the Licensee may seek to enter into a Sublicense with another Third Party. In such event, Section 2.5.8 (Proposing Party Development or Commercialization) shall apply to Licensee with such Third Party as the Proposing Party thereunder. If the Licensee enters into such a Sublicense with another Third Party within the Proposed Product Development Period, then Licensee shall have the right to discontinue any discussions under Section 2.5.8 (Proposing Party Development or Commercialization) without consequence and as long as the Sublicense with the Third Party that Licensee entered into remains in effect, Broad shall have no right to grant a [**] License for the applicable [**] Proposed Product. In the event that such Sublicense terminates, then Licensee shall promptly notify Broad and then [**] ([**] License) shall govern regarding any right of Broad to [**] License with respect to the relevant [**] Proposed Product.

2.5.10 Proposed Product Development Period Obligations. Throughout the Proposed Product Development Period set forth in Sections 2.5.7 (Intended Development or Commercialization) through Section 2.5.9 (Third Party Development or Commercialization), Licensee shall continuously use commercially reasonable efforts to, as applicable, (a) prepare, or have prepared, the research, development or commercialization plan and thereafter, commence

research or development activities pursuant to such plan, as required by Section 2.5.7 (Intended Development or Commercialization), or (b) enter into a Sublicense agreement and thereafter, commence (or have commenced) research and development activities under the research, development or commercialization plan, as required by Section 2.5.8 (Proposing Party Development or Commercialization) or 2.5.9 (Third Party Development or Commercialization).

2.5.11 [**] License. If, with respect to a [**] Proposed Product, (a) within [**] days of the Proposed Product Notice Date (or at any other time during the Proposed Product Development Period), Licensee notifies Broad that [**] in (i) [**], (b) Licensee [**], (c) Licensee [**], (d) Licensee [**], or (e) Licensee otherwise [**], as applicable, then, in each case (a) through (e), Broad will be entitled, [**] ([**]), to grant, in its sole discretion, to such Proposing Party [**] license under the Patent Rights to make, have made, offer for sale, sell, have sold and import such [**] Proposed Product or a Related Product to such [**] Proposed Product (a "[**] License"), and Licensee's rights to such Patent Rights shall, [**]; provided that each [**] License will require the Proposing Party to [**], provided further that [**].

2.5.12 [**]. All consideration to Broad (or its designee) under a [**] License (other than reimbursement for patent expenses paid to third parties equal to the out-of-pocket cost to Broad of such patent expenses) is "[**]." Broad shall be entitled to [**]. Unless otherwise agreed by the Parties, [**] will be paid [**] on an [**] basis in accordance with Broad's usual and customary practices for its distributions, except to the extent [**] under this Agreement in which case Broad may elect to [**]. [**] License [**] received by Broad or its designee, whether zero or a positive number, on an [**] basis in accordance with Broad's usual and customary practices for its distributions. Such reports and any related records shall be subject to audit by the Licensee on terms equivalent to those set forth in Section 5.3 (Records), applied *mutatis mutandis*, provided, however, that such audit shall be limited to an audit of Broad's records and shall not extend to any licensee under a [**] License (either directly or by causing Broad to exercise any audit rights it may have under the [**] License), and such audit shall be limited in scope to a determination that Broad's report of [**] is true and complete.

2.5.13 [**]. Licensee shall not be required to provide a Current Development Demonstration in accordance with Section 2.5.6 (Existing Development or Commercialization) hereof, or elect a [**] Proposed Product option in accordance with Section 2.5.5 ([**] Proposed Product Options) hereof, [**] License, for [**] Proposed Products [**] that have been selected for research, development or commercialization of a Licensed Product in the Field pursuant to a collaboration agreement between Licensee or its Affiliates and [**] (such collaboration agreement, a "[**]," such [**], in accordance with, and subject to, the following terms and conditions:

2.5.13.1 [**]. A [**] that has been selected for research, development or commercialization of a Licensed Product in the Field pursuant to a [**] may be [**] by Licensee, on a [**] basis, at the time of execution of such [**] or at any time within [**] years thereafter, up to that number of [**] specified in Section 2.5.13.3 (Permitted Number of [**]), to a list of [**] ("[**]") generated by Licensee and provided to and maintained by Broad or [**], as applicable. In the event there is [**], the compensation, costs and expenses for [**] shall be incurred and paid solely by Licensee. A [**] shall be deemed a "[**]" for the purposes of this Section 2.5.13 ([**]) and only

those [**] that are included on the [**] shall be deemed [**] for the purposes of this Section 2.5.13 ([**]). For the avoidance of doubt, a [**] shall not by itself constitute a [**]. Except as noted below with respect to [**], the effective date of addition of any [**] ("**Selection Date**") shall be [three (3)] business days prior to the date on which Broad or the [**] receives written notice from Licensee that a given [**] is to be added to the [**]. Except as noted below in connection with [**], a [**] shall be deemed a [**] for a period of [**] years from the date such [**] is added to the [**] unless removed in accordance with Section 2.5.13.6 (Other Limitations on [**]). In addition to the foregoing, Licensee may add to the [**] the [**] that are the subject of a [**] from a [**] at any time and from time to time between Licensee and such [**] regarding a [**]. A [**] that is included on the [**] shall be deemed a "[**]" for the purposes of this Section 2.5.13 ([**]) during the [**] Period (as defined below) and the date on which Broad or the [**] receives written notice from Licensee that a given [**] is to be added to the [**] List shall be deemed the "S**election Date**" for such [**]. The number of [**] that Licensee may add to the [**] in connection with any such [**] shall not exceed the number of [**] as Licensee would be eligible to add to the [**] if Licensee and such Third Party entered into such [**] Collaboration, as determined based on a [**] by such prospective [**] Collaborator in connection with such active discussions. Licensee shall clearly identify in its notice to Broad [**] those [**]. Licensee shall notify Broad [**] promptly if any [**] should be removed from the [**] because Licensee determines that the circumstances of the discussions with the [**] have changed and that such [**] is no longer the subject of [**], in which case such [**] shall be deemed not to have been nominated as a [**] for the purposes of this Section 2.5.13 ([**]). A [**] shall remain a [**], a [**] for [**] months (the "[**] **Period**") from the Selection Date for such [**], subject to up to [**] [**] of an additional [**] months by Licensee upon notice to Broad or the [**] if Licensee determines in good faith that such [**] remains the subject of [**] between Licensee and the relevant [**] regarding a [**] Collaboration at the time of such [**]. Licensee (or the [**], as applicable) shall notify Broad that Licensee has [**] that a [**] shall remain on the [**]. Such notice shall not identify the [**] by name nor include any other identifiable information but shall include a [**] for such [**] which shall enable Broad to track and monitor the status of such [**]. The purpose of such notice is to permit Broad to initiate communications with Licensee and to monitor compliance by Licensee with the terms of this Agreement. If Licensee enters into a [**] with respect to a [**], Licensee shall notify Broad within [three (3)] business days thereof, and such [**] shall remain a [**] and the Selection Date for such [**] shall remain the date on which Broad or the [**] received written notice from Licensee that such [**] was to be added to the [**]. If there is a [**], the [**] shall notify Licensee within [**] business day if any [**] that Licensee notifies [**] to add to the [**] is already, at the time of such notice, the subject of a [**] Inquiry having a [**] Inquiry Date that is more than [**] business days prior to such notice from Licensee. A [**] shall not become a [**] or be added to the [**] if such [**] is the subject of a [**] Inquiry having a [**] Inquiry Date that is more than [**] business days prior to the time at which Licensee notifies the [**] that Licensee is designating such [**] for inclusion on the [**].

2.5.13.2 [**]. If no [**] has been selected at the time of Licensee's selection of the first [**], Broad shall maintain the [**]. If at any time during the Term, (a) Licensee wishes to select a [**] or (b) Licensee no longer wishes for Broad to retain the [**], then Licensee shall provide Broad with written notice thereof (the "[****]**"**) and shall include in such notice a list of at least [**] independent attorneys registered to practice before the United States Patent and Trademark Office of whom neither Licensee nor Broad is a client, who are experienced in intellectual property matters in the biopharmaceutical industry and who are able to take on an obligation of confidentiality to both Parties. Within [**] days after the date of the [**], Broad shall select by written notice to Licensee (the "[****] Selection Notice**") one of the individuals named in the [**]. Such individual selected by Broad shall be the "[****]**." If Broad does not select such individual in a [**] Selection Notice within such [**] day period, then the individual selected by Licensee from among the individuals named in the [**] and identified by Licensee in writing to Broad shall be the [**]. The [**] shall be bound by confidentiality obligations to both Parties. In the event a [**] is no longer able or willing to serve in such role, the Parties shall appoint a new [**] by again following the procedures set forth in this Section 2.5.13.2. Notwithstanding anything in this Section 2.5.13, in the event that Licensee does not provide a [**] to Broad, there will be no [**] and, unless the context otherwise requires or unless otherwise expressly set forth in this Agreement, all references to "the [**]" under this Agreement will refer to Broad.

2.5.13.3 Permitted Number of [**]. The number of [**] that may be selected as [**] for a given [**] is dependent on the amount of [**] under the [**], in accordance with the following provisions of this Section 2.5.13.3 (Permitted Number of [**]). On a [**] basis, Licensee may select as [**] up to that number of [**] that is proportionate to the total amount of [**] under a given [**] at a rate of no less than [**] per [**]; provided, however, that such rate shall be [**] per [**] in effect as of the Effective Date. By way of example, (a) if the [**] under the [**] is [**], Licensee may add up to [**] to the [**], (b) if the [**] under the [**] is [**], Licensee may add up to [**] to the [**], and (c) if the [**] under the [**] is [**], Licensee may add up to [**] to the [**], in each case (a) through (c) which [**] shall be deemed [**]. If at any point during the Collaboration Period, there is a reduction in the levels of [**] under a given [**], Licensee shall notify Broad of such reduction and the [**] shall be adjusted accordingly to reflect such reduction in [**]. Promptly after the date of execution of any [**] are to be selected, Licensee shall notify Broad and, if applicable, the [**] thereof, and shall include in such notice the amount of [**] under such [**].

2.5.13.4 [**] Inquiry. Notwithstanding anything to the contrary in this Agreement, this Section 2.5.13.4 ([**] Inquiry) shall only apply if a [**] has been appointed under Section 2.5.13.2 ([**]). For any Proposed Product for which a Bona Fide Proposal has been provided to Broad, prior to providing a Proposed Product Notice with respect to such Proposed Product to Licensee in accordance with Section 2.5.3 (Proposed Product Notice), Broad shall inquire of the [**] in writing whether or not the [**] to which the applicable Proposed Product is directed is a [**] (such inquiry, the "[****] Inquiry**," the date of such inquiry, the "[****] Inquiry Date**"). The [**] shall, within the period beginning on the [**] business day and ending on the [**] business day following Broad's request, notify Broad in writing whether or not such [**] is a [**] (such notice, the "[****] Notice**"). The [**] Notice shall note if a [**]. If such [**], the [**] Notice shall include the Selection Date for such [**], and the provisions of Section 2.5.13.5 (Time-Limited Preclusion of [**]) and Section 2.5.13.6 (Other Limitations on

[**]) shall apply. If such [**] is not a [**], then Broad may provide Licensee with a Proposed Product Notice with respect to the Proposed Product that is directed to the applicable [**] under Section 2.5.3 (Proposed Product Notice). If the [**] does not [**] provide a [**] Notice to Broad, then Broad may notify Licensee in writing thereof ("[**] **Non-Performance Notice**") and Licensee may notify the [**] of such non-performance. If Broad does not receive a [**] Notice within [**] business days of the date of the [**] Non-Performance Notice, then Broad may provide a Proposed Product Notice directly to Licensee under Section 2.5.3 (Proposed Product Notice). [**] shall not disclose the existence or nature of a [**] Inquiry to Licensee until after the [**] business day following such [**] Inquiry, at which time [**] shall notify Licensee of each [**] that is the subject of such [**] Inquiry. Broad shall not disclose to any Third Party whether a [**] is a [**] reserved by Licensee or otherwise is under research, development and/or commercialization by Licensee or its Affiliate or Sublicensee; provided, however, that for any [**] that is the subject of a [**] Inquiry during the Collaboration Period for such [**], Broad shall be entitled to inform the Proposing Party that provided the Bona Fide Proposal for the [**] Proposed Product directed at the applicable [**] of the date on which such [**] that is a [**] may become available for a renewed Bona Fide Proposal, such date to correspond with the expiration of the Collaboration Period for the applicable [**]. If such Proposing Party provides such renewed Bona Fide Proposal, and Broad provides to Licensee a corresponding Proposed Product Notice based on such Bona Fide Proposal, then the provisions of Section 2.5.13.5 (Time-Limited Preclusion of [**]) shall apply to such Proposed Product Notice.

2.5.13.5 Time-Limited Preclusion of [**]. For a period of [**] years from the Selection Date (the "**Collaboration Period**"), Licensee shall not be required to provide a Current Development Demonstration in accordance with Section 2.5.6 (Existing Development or Commercialization) hereof, or elect a [**] Proposed Product option in accordance with Section 2.5.5 ([**] Product Options) hereof, and Broad shall have no right to grant a [**] License, for any [**] Proposed Product directed to a [**], provided that the Selection Date for such [**] is within [**] years from the execution date of the [**] under which the [**] has been selected. Following expiration of the Collaboration Period for a given [**], if Broad receives a Bona Fide Proposal for a [**] Proposed Product directed to such [**] and provides such Proposed Product Notice to Licensee, Licensee shall be required to provide to Broad a Current Development Demonstration for such [**] Proposed Product. If Licensee fails to provide a Current Development Demonstration for such [**] Proposed Product, then Broad shall be entitled to grant the Proposing Party a [**] License for such [**] Proposed Product.

2.5.13.6 Other Limitations on [**]. The Collaboration Period shall apply in lieu of, and not in addition to, the Proposed Product Development Period set forth in Sections 2.5.7 (Intended Development or Commercialization) through 2.5.9 (Third Party Development and Commercialization). Once a given [**] has been selected as a [**] under a given [**], the [**] Proposed Product options set forth in Section 2.5.5 ([**] Proposed Product Options) shall not apply to [**] Proposed Products directed to such [**]. [**] may be dropped from the [**] upon notice by Licensee to Broad; provided that, once a [**] has been dropped from the [**] for a given [**] (other than a [**] that is a [**] at the time it is dropped), it may not again be selected to the [**] for such [**].

2.5.14 Processing of Proposed Product Notices. Licensee shall not be required to simultaneously prepare or carry-out a plan under Sections 2.5.7 (Intended Development or Commercialization), 2.5.8 (Proposing Party Development or Commercialization), or 2.5.9 (Third Party Development or Commercialization) in accordance with the timing requirements set forth therein or with Section 2.5.10 (Proposed Product Development Period Obligations) (to "**Process**") for more than [**] Proposed Product Notices at any one time. If Broad provides a Proposed Product Notice for which Licensee fails to make a Current Development Demonstration and Licensee is currently Processing [**] other Proposed Product Notices on the Proposed Product Notice Date for such Proposed Notice, then the time periods set forth in Sections 2.5.7 (Intended Development or Commercialization), 2.5.8 (Proposing Party Development or Commercialization), 2.5.9 (Third Party Development or Commercialization), as applicable, for Processing of any such additional Proposed Notice by Licensee shall each be extended (and the obligation in Section 2.5.10 (Proposed Product Development Period Obligations) shall be tolled) by a period equal to the result of multiplying (a) [**] months times (b) (i) [**] if the number of Proposed Product Notices being Processed by Licensee on the relevant Proposed Product Notice Date is more than [**] and less than or equal to [**], [**] if the number of Proposed Product Notices being Processed by Licensee on the relevant Proposed Product Notice Date is more than [**] and less than or equal to [**], (iii) [**] if the number of Proposed Product Notices being Processed by Licensee on the relevant Proposed Product Notice Date is more than [**] and less than or equal to [**], and (iv) [**] if the number of Proposed Product Notices being Processed by Licensee on the relevant Proposed Product Notice Date is more than [**] ("**Proposed Product Extension Period**"). During such Proposed Product Extension Period for a given Proposed Product Notice, Broad shall not be permitted to grant a [**] License to any [**] Proposed Product that is the subject of such Proposed Notice. If the number of Proposed Product Notices being Processed by Licensee on the relevant Proposed Product Notice Date is more than [**], Licensee shall have no obligation to Process additional Proposed Notices until the number of Proposed Notices being Processed by Licensee is fewer than [**], and the Proposed Product Extension Period shall be extended until, and shall be recalculated at, such time.

2.6 No Other Grant of Rights. Except as expressly provided herein, nothing in this Agreement will be construed to confer any ownership interest, license or other rights upon Licensee or its Affiliates or Sublicensees by implication, estoppel or otherwise as to any technology, intellectual property rights, products or biological materials of Broad, or any other entity, regardless of whether such technology, intellectual property rights, products or biological materials are dominant, subordinate or otherwise related to any Patent Rights. By way of example and not of limitation, nothing contained herein shall restrict Broad from granting licenses under (a) the Patent Rights outside the Field or (b) the Product-Specific Base Editor Patent Rights and the Gene Targeting Patent Rights inside or outside the Field, provided such rights in the foregoing clause (b) are not granted to make, have made, offer for sale, sell, have sold, and import Base Editor Products for use in the Field (other than as permitted under Section 2.2 (Reservation of Rights, Certain Restrictions)) for so long as and to the extent that Licensee is granted exclusive licenses hereunder to such Patent Rights for such Base Editor Products in the Field.

2.7 Additional Limitations on Exercise of License Rights.

2.7.1 Germline Modification. Licensee will not use the Patent Rights for Human Germline Modification.

2.7.2 Gene-Drive Applications. Licensee will not use the Patent Rights for the stimulation of biased inheritance of particular genes or traits within a population of plants or animals.

2.7.3 Tobacco. Licensee will not use the Patent Rights for modifying the tobacco plant (including any plant part, plant cell, plant tissue or plant seed), except for modifications that (a) are related to the use of the tobacco plant as a manufacturing system or as a model system for research purposes but (b) are not related to any use or application in the cultivation, growth, manufacture, exportation or production of any tobacco product.

3. Development and Commercialization.

3.1 Diligence.

3.1.1 Licensee shall use commercially reasonable efforts: (a) to develop Licensed Products within the Field in accordance with the Development Plan; (b) to introduce any Licensed Products within the Field that gain Regulatory Approval into the commercial market; (c) to market Licensed Products within the Field that have gained Regulatory Approval following such introduction into the market; and (d) to make such Licensed Products that have gained Regulatory Approval reasonably available to the public. In addition, Licensee, by itself or through its Affiliates or Sublicensees, shall achieve each of the Development Milestones within the time periods specified in Exhibit 3.1.1, as they may be extended in accordance with this Agreement.

3.1.2 Sub-Categories of Patent Rights.

3.1.2.1 During the first [**] years following the Effective Date, Licensee shall devote commercially reasonable resources to determining the viability of the technology covered, claimed or otherwise disclosed in each Sub-Category of Patent Rights to exploit Licensed Products in the Field. In the event that Licensee makes a final determination that it will not pursue the research or development of any Licensed Product Covered by a Valid Claim of, or otherwise made, discovered, developed or determined to have utility, in whole or in part, by the use of, a Sub-Category of Patent Rights, it shall so notify Broad in writing and, unless otherwise agreed upon by the Parties in writing, Licensee's rights to such Sub-Category of Patent Rights shall be terminated under this Agreement upon Broad's receipt of such notice.

3.1.2.2 If, with respect to a Sub-Category of Patent Rights, either (a) Licensee has failed to devote commercially reasonable resources to determining the viability of the technology covered, claimed or otherwise disclosed in such Sub-Category of Patent Rights to exploit Licensed Products in the Field as set forth in Section 3.1.2.1 (Sub-Categories of Patent Rights) or (b) within [**] years after the Effective Date, Licensee has not (i) initiated a discovery program for the development of a Licensed Product covered by a Valid Claim of, or otherwise made, discovered, developed or determined to have utility, in whole or in part, by the use of, such Sub-Category of Patent

Rights and (ii) submitted an updated Development Plan and Development Milestones to Broad for such Sub-Category of Patent Rights as set forth in Section 3.2.2 (Adjustments of Development Plan), then the license to such Sub-Category of Patent Rights will terminate (such Sub-Category of Patent Rights subject to license termination, a "**Failed Sub-Category of Patent Rights**"). If the Failed Sub-Category of Patent Rights is a Sub-Category of Base Editor Patent Rights, then Licensee's license to the Gene Targeting Patent Rights shall be deemed to be non-exclusive with respect to such Failed Sub-Category of Patent Rights. Notwithstanding the foregoing, if Licensee is developing a Licensed Product that is Covered by both the Failed Sub-Category of Patent Rights and a separate Sub-Category of Patent Rights, then Licensee may, within [**)] days of such Sub-Category of Patent Rights becoming a Failed Sub-Category of Patent Rights, provide a list to Broad of all such Licensed Products and a reasonably detailed written explanation of how such products are Covered by such separate Sub-Category of Patent Rights. If Broad agrees, in its reasonable discretion, that such Licensed Product is Covered by such separate Sub-Category of Patent Rights, then Licensee will retain a non-exclusive license to the Failed Sub-Category of Patent Rights solely to the extent necessary to develop such Licensed Product. Subject to the foregoing sentence, Broad shall have the right in its sole discretion to grant exclusive or non-exclusive licenses to any Third Party under such Failed Sub-Category of Patent Rights. Additionally, Broad shall have the right to grant to third party licensees of any Failed Sub-Category of Patent Rights, a non-exclusive license under the Patent Rights other than such Failed Sub-Category of Patent Rights solely to make, have made, offer for sale, sell, have sold and import products Covered by such Failed Sub-Category of Patent Rights in the Field, which non-exclusive license shall not extend to components of such product that are, (x) if the Failed Sub-Category of Patent Rights is a Failed Sub-Category of Base Editor Patent Rights, a different category of Base Editor than the category of Base Editor that is the subject matter of such Failed Sub-Category of Base Editor Patent Rights or a DNA Cleaver and (y) if the Failed Sub-Category of Patent Rights is the DNA Cleaving Patent Rights, a Base Editor. As a non-limiting example of the foregoing exclusion, if [**] under this paragraph, then the foregoing non-exclusive license under the remaining patent rights would [**]. Broad's rights under this Section 3.1.2.2 (Sub-Categories of Patent Rights) shall be its exclusive termination rights under this Agreement for any breach by Licensee of Section 3.1.2.1 (Sub-Categories of Patent Rights) or failure of Licensee described in clause (a) or (b) of this Section 3.1.2.2 (Sub-Categories of Patent Rights).

The foregoing paragraph may apply to multiple Sub-Categories of Patent Rights, if there are multiple Failed Sub-Categories of Patent Rights.

3.2 Adjustments of Development Plan.

3.2.1 Within [**] months after the Effective Date, Licensee shall submit to Broad a written plan for the development and commercialization of Licensed Products, which shall be attached hereto as Exhibit 3.2.1. Such plan shall be designed to meet the Development Milestones attached in Exhibit 3.1.1, on the timeline provided in Exhibit 3.1.1. Broad shall have the right to approve Licensee's submitted Development Plan, such approval not to be unreasonably withheld, delayed, or conditioned. Broad shall be reasonably available to meet and discuss with Licensee as Licensee is preparing the Development Plan, to help ensure consensus as to the Development Plan that Licensee will submit. In addition, an abbreviated plan outlining the high-level anticipated development actions and timelines for DNA Base Editor Products, RNA Base Editor Products and DNA Cleaving Products is attached hereto as Exhibit 3.2.1-1.

3.2.2 Within [**] years after the Effective Date, Licensee shall update its Development Plan and Development Milestones to include the elements required by the Sub-Category Product Milestones. Broad shall have the right to approve Licensee's submitted, updated Development Plan, such approval not to be unreasonably withheld, delayed, or conditioned. Broad shall be reasonably available to meet and discuss with Licensee as Licensee is preparing the updated Development Plan, to help ensure consensus as to the Development Plan that Licensee will submit.

3.2.3 Licensee will be entitled, from time to time, upon providing prior written notice to Broad, to make such adjustments to the then applicable Development Plan as Licensee believes, in its good faith judgment, are needed in order to improve Licensee's ability to meet the Development Milestones, provided that such adjustment right shall not include the right to adjust the timelines for the Milestone Deadlines except as set forth in Section 3.5.1 (Notice/Explanation/Plan).

3.3 Regulatory Filings. As between Broad and Licensee, and subject to Section 2.5 (Inclusive Innovation Model) Licensee shall have the right to prepare and present all regulatory filings necessary or appropriate to obtain Regulatory Approval for Licensed Products in the Field in any country and to obtain and maintain any Regulatory Approval required to market Licensed Products in the Field in any such country. Licensee shall solely own all right, title and interest in and to all such Regulatory Approvals and filings.

3.4 Reporting. Within [**] days after the end of each Calendar Year, Licensee shall furnish Broad with a written report summarizing its, its Affiliates' and its Sublicensees' efforts during the prior year to develop and commercialize Licensed Products within the Field, including: (a) research and development activities, including information regarding specific Royalty-Bearing Products in development and their therapeutic applications; (b) the status of applications for Regulatory Approvals; (c) commercialization or other distribution efforts; and (d) marketing efforts. Each report must contain a sufficient level of detail for Broad to assess whether Licensee is in compliance with its obligations under Section 3.1 (Diligence) and a discussion of intended efforts for the then current year. Together with each report, Licensee shall provide Broad with a copy of the then current Development Plan, which shall include sufficient detail to enable Broad to assess what Royalty-Bearing Products are in development and the status of such development.

3.5 Failure to Meet Development Milestone: Opportunity to Cure.

3.5.1 Notice/Explanation/Plan. If Licensee believes that it will not achieve a Development Milestone by the then-applicable deadline (i.e., the original timeline therefor in Exhibit 3.1.1, or any extension thereto in accordance with this Agreement) ("**Milestone Deadline**") or that such then-applicable Milestone Deadline needs to be or should be extended, it may notify Broad in writing in advance of the relevant deadline, explicitly referencing this Section 3.5.1 (Notice/Explanation/Plan). Licensee shall include with such notice (a) a

reasonable explanation of the reasons for such failure or need for extension (and lack of finances or development preference for a non-Royalty-Bearing Product will not constitute reasonable basis for such failure or need for extension) in sufficient detail to enable Broad to assess Licensee's compliance with Section 3.1.1 (Diligence) ("**Explanation**") and (b) a reasonable, detailed, written plan for promptly achieving a reasonable extended or amended milestone ("**Plan**").

3.5.2 Missing Plan or Explanation. If Licensee notifies Broad in accordance with Section 3.5.1 (Notice/Explanation/Plan), but fails to provide Broad with both an Explanation and Plan, then Licensee will have an additional [**] days or until the original deadline of the relevant Development Milestone, whichever is later, to meet such milestone. Licensee's failure to do so shall constitute a material breach of this Agreement, and Broad shall have the right to terminate this Agreement solely to the extent described in the applicable provision of Section 3.5.6 (Unmet Deadline).

3.5.3 Sufficient Notice/Explanation/Plan. If Licensee notifies Broad as provided in Section 3.5.1 (Notice/Explanation/Plan) and provides Broad with an Explanation and Plan, then the applicable Milestone Deadline set forth on Exhibit 3.1.1 will be amended automatically to incorporate such extension to such Milestone Deadline; provided such extension does not extend the applicable Milestone Deadline by an amount greater than [**] years beyond the applicable Milestone Deadline as provided in Exhibit 3.1.1 hereto as of the Effective Date of this Agreement. Any request by Licensee to extend a Milestone Deadline by an amount greater than [**] years beyond the applicable Milestone Deadline as provided in Exhibit 3.1.1 hereto as of the Effective Date of this Agreement (whether as an initial request or through multiple extensions to such Milestone Deadline) shall only apply, and the applicable Milestone Deadline shall only be extended, if both such Explanation and Plan are acceptable to Broad in its reasonable discretion.

3.5.4 Explanation Discussions. If Licensee so notifies Broad and provides Broad with an explanation for such failure or need for extension and Plan, but such explanation is not an Explanation, then Licensee will have an additional [**] days or until the original deadline of the relevant Development Milestone, whichever is later, to meet such milestone. Licensee's failure to do so shall constitute a material breach of this Agreement, and Broad shall have the right to terminate this Agreement solely to the extent described in the applicable provision of Section 3.5.6 (Unmet Deadline).

3.5.5 Plan Discussions. If Licensee notifies Broad in accordance with Section 3.5.1 (Notice/Explanation/Plan) and Licensee submits an Explanation and Plan to Broad that requests to extend a Milestone Deadline by an amount greater than [**] years beyond the applicable Milestone Deadline as provided in Exhibit 3.1.1 hereto as of the Effective Date of this Agreement (whether as an initial request or through multiple extensions to such Milestone Deadline), and the Plan provided by Licensee is not acceptable to Broad in its reasonable discretion, then Broad will explain in writing to Licensee why the Plan is not acceptable and provide Licensee with written suggestions for an acceptable Plan. Licensee will have [**] opportunity to provide Broad with an acceptable Plan within [**] days, during which time Broad agrees to work with Licensee in good faith in Licensee's effort to develop a reasonably acceptable Plan. If, within such [**] days, Licensee provides Broad with an acceptable Plan, then, Exhibit 3.1.1 will be amended automatically to incorporate the extended or amended milestone set forth in the Plan. If, within such [**] days, Licensee fails to provide an acceptable Plan, then Licensee will have an additional [**] days or until the original deadline of the relevant Development Milestone, whichever is later, to meet such milestone.

3.5.6 Unmet Deadline. Licensee's failure to meet the then-current Milestone Deadline for any Development Milestone (taking into account any extension or modification thereof as a result of the applicable procedures set forth in Sections 3.5.1 (Notice/Explanation/Plan) through 3.5.5 (Plan Discussions)) shall constitute a material breach of this Agreement, and Broad shall have the following rights as its exclusive termination rights for such material breach of this Agreement:

3.5.6.1 If such failure is a failure to meet the first Development Milestone ("Initiate a discovery program …") with respect to [**] Royalty-Bearing Products within the timeframe set forth on Exhibit 3.1.1, then Broad shall have the right to terminate this Agreement forthwith, immediately upon written notice to Licensee under Section 10.2.2.4 (Termination for Default).

3.5.6.2 If such failure relates to (a) a Licensed Product, Enabled Product, Base Editor Product or DNA Cleaving Product for which Licensee exercised its rights under Sections 2.5.7 (Intended Development or Commercialization), 2.5.8 (Proposing Party Development or Commercialization), or 2.5.9 (Third Party Development or Commercialization) following receipt of a Proposed Product Notice with respect to a [**] Proposed Product, (b) a Licensed Product that was a Retained Product for which Licensee retained the licenses under Section 2.1 (License Grants) in accordance with the terms of Section 3.5.6.3 (Unmet Deadline) or (c) a Licensed Product that was a Restored Product for which Licensee was granted the licenses under Section 2.1 (License Grants) in accordance with the terms of Section 3.5.7.3 (Failure to Meet Development Milestone: Opportunity to Cure), then Broad will be entitled, without any compensation or accounting to Licensee, to terminate forthwith, immediately upon written notice to Licensee, the licenses granted under Section 2.1 (License Grants) with respect to the applicable [**] to which the [**] Proposed Product (or in the cases of clauses (b) and (c), such relevant Licensed Product) is directed. Upon such termination, Broad shall be entitled to grant to any third party(ies) an exclusive or non-exclusive license(s) under the Patent Rights to make, have made, offer for sale, sell, have sold and import such Licensed Product for use within the Field or outside the Field.

3.5.6.3 If such failure is not a failure provided for under Section 3.5.6.1 (Unmet Deadline) or Section 3.5.6.2 (Unmet Deadline) and is a failure to meet the then-current Milestone Deadline for any Development Milestone (taking into account any extension or modification thereof as a result of the applicable procedures set forth in Sections 3.5.1 (Notice/Explanation/Plan) through 3.5.5 (Plan Discussions)) that is not a Sub-Category Product Milestone, Broad shall be entitled, without any compensation or accounting to Licensee, to terminate forthwith, immediately upon written notice to Licensee, the licenses granted under Section 2.1 (License Grants) with respect to all Royalty-Bearing Products for which Licensee has not achieved Initiation of GLP Toxicology prior to the date of such notice (other than any such Royalty-Bearing

Products that are Related Products to a Royalty-Bearing Product for which Licensee has achieved Initiation of GLP Toxicology prior to the date of such notice). If such failure is not a failure provided for under Section 3.5.6.1 (Unmet Deadline) or Section 3.5.6.2 (Unmet Deadline) and is a failure to meet the then-current Milestone Deadline for any Development Milestone (taking into account any extension or modification thereof as a result of the applicable procedures set forth in Sections 3.5.1 (Notice/Explanation/Plan) through 3.5.5 (Plan Discussions)) that is a Sub-Category Product Milestone, Broad shall be entitled, without any compensation or accounting to Licensee, to terminate forthwith, immediately upon written notice to Licensee, the licenses granted under Section 2.1 (License Grants) with respect to such Sub-Category of Patent Rights except with respect to Royalty-Bearing Products for which Licensee has achieved Initiation of GLP Toxicology prior to the date of such notice and any Royalty-Bearing Products that are Related Products to a Royalty-Bearing Product for which Licensee has achieved Initiation of GLP Toxicology prior to the date of such notice.

(a) Promptly after receipt of such notice (and in any event within [**] days thereof), Licensee shall deliver to Broad a true, correct and complete list of all Royalty-Bearing Products for which Licensee has achieved Initiation of GLP Toxicology prior to the date of such notice and that, if applicable, are covered by a Valid Claim within, or otherwise made, discovered, developed or determined to have utility, in whole or in part, by the use of, the terminated Sub-Category of Patent Rights (the "**Retained Product List**") and sufficient information for Broad to identify Related Products (i.e., [**], splicing variant or mutation, intended patient population and intended clinical outcome) to such Royalty-Bearing Products. For each such Royalty-Bearing Product (each, a "**Retained Product**"), Licensee shall follow the following procedure:

(b) For each Retained Product, the Parties will negotiate in good faith and agree, during the [**] days following the date Licensee provided the Retained Product List to Broad, upon a development plan with respect to such Retained Product, which development plan will be similar to the Development Plan with respect to Licensed Products that were being developed by Licensee, subject to necessary adjustments, and will include reasonable development milestones, including at least [**] preclinical development milestone if such Retained Product is a preclinical product, and associated timelines. In the discussion of such development plan and development milestones, Broad shall not unreasonably withhold its consent to Licensee's proposed plan. If the Parties agree in writing on such development plan and development milestones within such [**] day period, Broad shall grant to Licensee, and shall be deemed to have granted to Licensee, the licenses under Section 2.1.1 (License Grants) to make, have made, offer for sale, sell, have sold and import such Retained Product and Related Products to such Retained Product for use within the Field, and under Section 2.1.2 (License Grants) to make, have made, offer for sale, sell, have sold and import such Retained Product and Related Products that are Base Editor Products, but Licensee shall be obligated (a) to use commercially reasonable efforts to develop and commercialize the Retained Product in accordance with such new development plan (which shall be incorporated into and be part of the

"Development Plan" for all purposes hereunder) and (b) to meet the development milestones on the timeline associated therewith with respect to the Retained Product (which shall be a "Development Milestone", which shall not be subject to extension in the manner provided in Sections 3.5.1 (Notice/Explanation/Plan) through 3.5.5 (Plan Discussions), but shall only be subject to extension in Broad's sole discretion). Exhibit 3.1.1 shall be amended to reflect such development milestones and timeline with respect to such Retained Product. If the Parties do not agree in writing on such development plan and milestones for such Retained Product within such [**] day period, the licenses under Section 2.1 (License Grants) to make, have made, offer for sale, sell, have sold and import such Retained Product and Related Products to such Retained Product shall be deemed terminated as of 11:59 p.m. Eastern Time on the last day of such period.

(c) Notwithstanding anything in this Agreement to the contrary, the procedure set forth in Sections 3.5.1 (Notice/Explanation/Plan) through 3.5.5 (Plan Discussions) shall not be applicable to extend the Development Milestones for a Licensed Product that was a Retained Product (although the Development Plan may still be updated with respect thereto without modifying the Development Milestones, and the Development Milestones may still be modified with Broad's consent in its sole discretion).

(d) Notwithstanding anything in this Section 3.5.6 (Unmet Deadline) to the contrary, for any Retained Product for which a Retained Product or a Related Product to such Retained Product already had a Development Plan and Development Milestones in place, and such Retained Product or a Related Product to such Retained Product that already had a Development Plan and Development Milestones in place has not missed such Development Milestones, such Development Plan and Development Milestones shall remain in place, with no requirement to negotiate a new Development Plan and new Development Milestones with respect thereto for such Retained Product or a Related Products to such Retained Product.

3.5.7 If Broad has terminated any licenses granted under Section 2.1 (License Grants) in accordance with the terms of Section 3.5.6.3 (Unmet Deadline) and during the Term, Licensee wishes to obtain the licenses under Section 2.1 (License Grants) with respect to a product for which Licensee does not have a license under Section 2.1 (License Grants) and that was, prior to such termination, within the definition of Royalty-Bearing Product (each, a "**Restored Product**" and such licenses, "**Restored Licenses**"), Licensee shall notify Broad, and Broad and Licensee shall follow the procedures below:

3.5.7.1 Licensee shall make a proposal to Broad equivalent in all material respects to a Bona Fide Proposal to Broad for developing such Restored Product in the Field, including with such proposal a statement of the extent such Restored Product is Covered by the Base Editor Patent Rights, DNA Cleaving Patent Rights or Gene Targeting Patent Rights and sufficient information for Broad to identify Related Products (i.e., [**], splicing variant or mutation, indicated patient population and clinical outcome) to such Restored Product. If Broad is interested in having such Restored Product

developed and commercialized, Broad has not granted to any third party (such third parties to include, for purposes of this Section 3.5.7.1 (Failure to Meet Development Milestone: Opportunity to Cure), Affiliates of Licensee) any rights or licenses that would be breached by the grant of the Restored Licenses and the grant by Broad of the Restored Licenses would not otherwise be in conflict with any contract, agreement, arrangement or understanding between Broad and a third party, Broad shall notify Licensee.

3.5.7.2 If the proposal does not meet the definition of Bona Fide Proposal (as applied to the Restored Product and not a [**] Proposed Product), then Section 3.5.7.3 (Failure to Meet Development Milestone: Opportunity to Cure) shall not apply.

3.5.7.3 If Licensee notifies Broad within [**] days after Broad has notified Licensee pursuant to the last sentence of Section 3.5.7.1 (Failure to Meet Development Milestone: Opportunity to Cure), the Parties will negotiate, during the [**] days following such notification by Licensee, a development plan with respect to such Restored Product, which development plan will be similar to the Development Plan with respect to Licensed Products developed by Licensee, subject to necessary adjustments, and will include reasonable development milestones, including at least one preclinical development milestone if such Restored Product is a preclinical product, and associated timelines. Broad may withhold its consent to Licensee's proposed development plan and development milestones in Broad's sole discretion. If the Parties agree in writing on such development plan and milestones within such [**] day period, Broad shall grant to Licensee, and shall be deemed to have granted to Licensee, the licenses under Section 2.1 (License Grants) to make, have made, offer for sale, sell, have sold and import such Restored Product and Related Products to such Restored Product for use within the Field, but Licensee shall be obligated (a) to use commercially reasonable efforts to develop and commercialize the Restored Product in the Field in accordance with such new development plan (which shall be incorporated into and be part of the "Development Plan" for all purposes hereunder) and (b) to meet the development milestones on the timeline associated therewith with respect to the Restored Product (which shall be a "Development Milestone" (for all purposes hereunder) (subject to extension in the same manner as provided in Sections 3.5.1 (Notice/Explanation/Plan) through 3.5.5 (Plan Discussions), applied *mutatis mutandis*). Exhibit 3.1.1 shall be amended to reflect such development milestones and timeline with respect to such Restored Product. If the Parties do not agree in writing on such development plan and development milestones for such Restored Product within such [**] day period, Broad shall have no obligations to Licensee with respect to such Restored Product hereunder.

3.5.7.4 For clarity, the provisions of this Section 3.5.7 (Failure to Meet Development Milestone: Opportunity to Cure) shall not apply to any product with respect to which Broad exercised its rights under Section 3.5.6.2 (Unmet Deadline) to terminate the licenses under Section 2.1 (License Grants).

3.6 Activities of Others. Licensee may satisfy its obligations under Sections 3.1 (Diligence) through 3.5 (Failure to Meet Development Milestone: Opportunity to Cure) by the actions of itself, its Affiliates, its Sublicensees, or by the actions of any combination of the foregoing, subject to the terms and conditions set forth in Section 2.3 (Affiliates) and Section 2.4 (Sublicenses); provided, however, that the activities of a Sublicensee to whom Licensee grants a Cross License that is not part of a collaboration or other license agreement that is materially broader in scope than such Cross License (and that includes a development plan under which such Sublicensee has diligence obligations to Licensee) shall not be deemed to so satisfy Licensee's obligation under Sections 3.1 (Diligence) through 3.5 (Failure to Meet Development Milestone: Opportunity to Cure).

4. Consideration for Grant of License.

4.1 Equity.

4.1.1 Initial Issuance. In accordance with the terms of the Subscription Agreement, Licensee shall, on the Effective Date and concurrent with the execution of this Agreement, as partial consideration for the licenses granted hereunder, issue to Broad or designees identified to Licensee in writing prior to the Effective Date (the "**Broad Designees**"), an aggregate of 560,000 shares of Licensee's common stock, representing eight and four-tenths percent (8.4%) of Licensee's outstanding capital stock on a Fully-Diluted Basis as of the date of such issuance and after giving effect to such issuance (the "**Shares**"). Broad hereby agrees that, as a condition to and effective as of the issuance of the Shares, Broad and, if applicable, the Broad Designees, will execute a joinder to that certain Right of First Refusal and Co-Sale Agreement by and among the Licensee and the stockholders set forth therein and that certain Voting Agreement by and among the Licensee and the stockholders set forth therein, each dated on or about the date hereof, as a common stockholder of Licensee.

4.1.2 Anti-Dilution Issuances. If, at any time prior to the achievement of the Financing Threshold, Licensee issues Additional Securities that would cause the Shares to represent less than [**] of Licensee's outstanding capital stock on a Fully-Diluted Basis (excluding Exempted Issuances), Licensee shall immediately issue to Broad and the Broad Designee on a pro rata basis, for no additional consideration, such additional number of shares of common stock of Licensee (the "**Anti-Dilution Shares**") such that the Shares plus the Anti-Dilution Shares (including any Anti-Dilution Shares previously issued to Broad pursuant to this Section 4.1.2 (Anti-Dilution Issuances), and any Shares or Anti-Dilution Shares transferred by Broad to a third party or held by an Affiliate of Broad) would then represent in the aggregate [**] of Licensee's outstanding capital stock on a Fully Diluted Basis (excluding Exempted Issuances), as calculated after giving effect to the anti-dilutive issuance up to the Financing Threshold, but not any issuances in consideration for investment amounts in excess of the Financing Threshold; provided however, that to the extent such Additional Securities are issued pursuant to an equity incentive plan, Licensee shall issue the Anti-Dilution Shares upon the earlier of (a) the end of Licensee's fiscal year in which the issuances took place, (b) the closing of the next preferred stock financing, and (c) immediately prior to a Beam Change of Control or a Change of Control, in each case, calculated as of the date contemplated by (a), (b) or (c), as applicable. Licensee shall provide Broad with evidence of the issuance of such Anti-Dilution Shares promptly after their issuance. Such issuances shall continue only up to, and until such time as Licensee has achieved, the Financing Threshold. Thereafter, no additional shares shall be due to Broad pursuant to this Section 4.1.2 (Anti-Dilution Issuances). The Anti-Dilution Shares will be subject to the same restrictions as the Shares in accordance with the terms of the Subscription Agreement.

4.1.3 Preemptive Rights. Broad and the Broad Designees shall have, pursuant to the Subscription Agreement, the right to purchase from Licensee in offerings of equity securities by Licensee (excluding (a) Exempted Issuances, (b) shares of common stock issued or issuable, and options, warrants or other rights to purchase Common Stock issued or issuable to Licensee's employees, consultants, officers, directors, or advisors as part of an incentive compensation arrangement or to Licensee's former employees, consultants, officers, directors, or advisors as part of a settlement of any dispute regarding incentive compensation arrangements, (c) shares of Common Stock issued or issuable to banks, equipment lessors, real property lessors, financial institutions or other Persons engaged in the business of making loans pursuant to a debt financing, commercial leasing or real property leasing transaction, and (d) shares of Common Stock issued or issuable in connection with any settlement of any action, suit, proceeding or litigation) after the Financing Threshold has been achieved that portion of such equity securities as equals the proportion that the common stock then held by Broad or a Broad Designee, as applicable (including all shares of common stock then issuable upon conversion or exercise, as applicable, of preferred stock and any other equity securities then held by Broad) bears to the total common stock of Licensee then outstanding on a Fully-Diluted Basis. The foregoing right shall be subject to the terms, conditions and exceptions as are contained in the Subscription Agreement, which terms, conditions and exceptions shall be no less favorable to Broad and the Broad Designees than the terms, conditions and exceptions offered to the holders of preferred stock holding similar rights, unless otherwise provided in this Section 4.1.3 (Preemptive Rights), and to the extent the terms of this Section 4.1.3 (Preemptive Rights) and the Subscription Agreement conflict, the terms of the Subscription Agreement shall control. The Subscription Agreement shall provide that during the period prior to any Change of Control of Licensee or any Initial Public Offering, Broad and the Broad Designees may not sell or otherwise transfer the shares acquired by them upon exercise of the foregoing right without the consent of Licensee to any third party other than a holder of the preferred stock of Licensee. The Subscription Agreement shall provide that during the period prior to any Change of Control of Licensee or any Initial Public Offering, Broad and the Broad Designees may sell or otherwise transfer the shares acquired by them upon exercise of the foregoing right without the consent of Licensee to any third party other than a holder of the preferred stock of Licensee; provided, in each such case, that Broad or the applicable Broad Designee notifies Licensee in writing, and the transferee agrees and consents to be bound in writing by the transaction agreements pursuant to which such securities were originally acquired. The Subscription Agreement shall provide that Broad and the Broad Designees may not assign the foregoing right without the consent of Licensee to any third party other than a holder of the preferred stock of Licensee. The Subscription Agreement shall provide that Broad and the Broad Designees may assign the foregoing right without the consent of Licensee to any third party other than a holder of the preferred stock of Licensee; provided, that, in each such case, Broad or the applicable Broad Designee notifies Licensee in writing in connection with the transfer of such rights. With regard to assignment of the foregoing right to a holder of the preferred stock of Licensee, the Subscription Agreement shall provide that Broad or the applicable Broad Designee may assign the foregoing right in whole or in part and in any one or more instances.

4.1.4 Representations and Warranties. Licensee represents and warrants to Broad that, upon issuance of the Shares, and upon issuance of any Anti-Dilution Shares:

4.1.4.1 the capitalization table as provided by Licensee (the "**Cap Table**") upon issuance of the Shares or the Anti-Dilution Shares, as the case may be, sets forth all of the capital stock of Licensee on a Fully-Diluted Basis as of the date of issuance of the Shares or the Anti-Dilution Shares, on a pro forma basis as of immediately subsequent to the issuance of the Shares or the Anti-Dilution Shares, as applicable;

4.1.4.2 other than as set forth in the Cap Table, as of the date of issuance of the Shares or Anti-Dilution Shares, as applicable, there are no outstanding shares of capital stock, convertible securities, outstanding warrants, options or other rights to subscribe for, purchase or acquire from Licensee any capital stock of Licensee and there are no contracts or binding commitments providing for the issuance of, or the granting of rights to acquire, any capital stock of Licensee or under which Licensee is, or may become, obligated to issue any of its securities; and

4.1.4.3 the Shares or the Anti-Dilution Shares, as the case may be, when issued pursuant to the terms hereof, shall, upon such issuance, be duly authorized, validly issued, fully paid and nonassessable.

4.1.5 Information. Upon request, but no more frequently than [**] per Calendar Quarter, Licensee will deliver to Broad a statement of the outstanding capital stock of Licensee on a Fully Diluted Basis in sufficient detail as to permit Broad to calculate its percentage equity ownership in Licensee. Prior to the Initial Public Offering or a Change of Control, at the request of Broad or a Broad Designee, but in no event more than [**] per Calendar Year, representatives of Licensee with knowledge of the Licensee's general business shall meet with representatives of Broad to discuss matters pertaining to Licensee and its business; provided that Licensee shall have no obligation to deliver such information to the extent delivery could adversely affect the attorney-client privilege between Licensee and its counsel or because Licensee owes a duty of confidentiality with respect to such information to a Third Party.

4.2 Annual License Maintenance Fees. Licensee shall pay Broad annual license maintenance fees ("**Maintenance Fees**") as follows:

Calendar Year(s)	Maintenance Fee (U.S. Dollars)
2018	[**]
2019	[**]
2020 and each subsequent Calendar Year during the Term	[**]

Each such Maintenance Fee shall be due and payable on [**] of the Calendar Year to which such fee applies; *provided* that with respect to the Maintenance Fee due for Calendar Year 2018, the Maintenance Fee shall be due and payable within [**] days of the Effective Date.

4.3 Milestone Payments.

4.3.1 Product Milestone Payments. With respect to each of Base Editor Products and DNA Cleaving Products, Licensee shall pay Broad the following milestone payments for each Royalty-Bearing Product to reach each milestone, regardless of whether such milestone is achieved by Licensee or any Affiliate or Sublicensee of Licensee, subject to Section 4.3.4 (Milestone Payments); provided that once, with respect to any milestone event, the total milestone payments set forth in Column C for such milestone event have become payable by Licensee for each of Base Editor Products and DNA Cleaving Products, no further milestone payments will be payable by Licensee for the achievement of such milestone event. By way of illustration, no further milestones would become payable for a milestone event for Base Editor Products after three Base Editor Products that are Licensed Products and four Base Editor Enabled Products that are Enabled Products achieved such milestone event. For clarity, if the Royalty-Bearing Product to reach a milestone is a Licensed Product, Column A of the table below sets forth the milestone payment due and if the Royalty-Bearing Product to reach a milestone is an Enabled Product, Column B of the table below sets forth the milestone payment due.

Milestone Event	Column A Milestone Payment for Licensed Products (U.S. Dollars)	Column B Milestone Payment for Enabled Products (U.S. Dollars)	Column C Total Milestone Payments in Aggregate for Milestone Event
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]

Upon the consummation (i.e., closing) of a Change of Control of Licensee at any time during the Term, the dollar amounts set forth in the table above under “Milestone Payments (U.S. Dollars)” shall be deleted and the milestone payments set forth in the table below shall be substituted for the corresponding milestone payments for occurrences of a milestone event after the consummation of Change of Control; provided that, for milestone events achieved prior to the applicable Change of Control, the milestone payments payable for such milestone event shall be deemed to have been paid in the corresponding amounts set forth in the substituted table. For

example, if the milestone event for [**] was achieved for a Licensed Product prior to the Change of Control, the $[**] milestone payment payable shall be deemed, for the purposes of calculating the total milestone payments made in the aggregate for such milestone event under the substituted table, as a $[**] milestone payment. It is understood that the increased milestone amounts shall only apply on a going-forward basis from the time of a Change of Control; no increase to the amounts of the milestone payments due for milestone events achieved prior to the Change of Control shall be due.

Milestone Event	Column A Milestone Payment for Licensed Products (U.S. Dollars)	Column B Milestone Payment for Enabled Products (U.S. Dollars)	Column C Total Milestone Payments in Aggregate for Milestone Event
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]

4.3.2 Financing Milestone Payments.

4.3.2.1 Series A Financing. Subject to the terms of this Section 4.3.2.1 (Series A Financing), Licensee shall pay to Broad, in accordance with Section 4.3.3 (Milestone Payments), upon achievement by Licensee (together with its Affiliates for purposes of this Section 4.3.2.1 (Series A Financing), including the calculation of sales by Licensee of shares of Series A Preferred Stock) of each of the financing milestone events set forth below the applicable milestone payment set forth opposite such milestone event set forth below:

Milestone Event	Milestone Payment (U.S. Dollars)
1. Closing of sale by Licensee, in a single transaction or series of transactions since inception, of shares of Series A Preferred Stock yielding aggregate gross proceeds to Licensee of [**]	[**]
2. Closing of sale by Licensee, in a single transaction or series of transactions since inception, of shares of Series A Preferred Stock yielding aggregate gross proceeds to Licensee of [**]	[**]
3. Closing of sale by Licensee in a single transaction or series of transactions since inception, of shares of Series A Preferred Stock yielding aggregate gross proceeds to Licensee of [**]	[**]

Each milestone payment set forth in table above in this Section 4.3.2.1 (Series A Financing) shall be payable only once.

If a Beam Change of Control occurs prior to the achievement of any milestone event(s) in the table above in this Section 4.3.2.1 (Series A Financing), then all then unpaid milestone payments will be due from Licensee to Broad within [**] days of the consummation of the Beam Change of Control transaction.

If Licensee sells any equity security other than Series A Preferred Stock (excluding common stock sold to employees or consultants as part of an incentive compensation arrangement) as part of a financing transaction of Licensee prior to the sale of $[**] in Series A Preferred, the aggregate gross proceeds from such financing transaction shall be applied towards the achievement of a milestone event set forth in the table above in this Section 4.3.2.1 (Series A Financing) as if the cash proceeds were for the purchase of Series A Preferred Stock, and if any milestone event is deemed achieved as a result, then the corresponding milestone payment set forth in the table above in this Section 4.3.2.1 (Series A Financing) shall be paid to Broad in accordance with Section 4.3.3 (Milestone Payments).

If prior to the payment by Licensee of an aggregate of $[**] to Broad pursuant to this Section 4.3.2.1 (Series A Financing), a milestone payment becomes due under this Agreement for achievement by Licensee or any Affiliate or Sublicensee of Licensee of the milestone event described in the table above in Section 4.3.1 (Product Milestone Payments) as [**] becomes due under this Agreement, any milestone payment set forth in the table above in this Section 4.3.2.1 (Series A Financing) remaining unpaid shall be paid on the date such milestone payment or [**], as the case may be, is due.

In no event shall Licensee be required to pay more than $[**] to Broad pursuant to this Section 4.3.2.1 (Series A Financing).

4.3.2.2 Series B Financing prior to Beam Change of Control. Prior to a Beam Change of Control, upon each closing of the sale by Licensee (together with its Affiliates for purposes of this Section 4.3.2.2 (Series B Financing prior to Beam Change of Control), including the calculation of sales by Licensee of shares of Series B Preferred Stock) of shares of Series B Preferred Stock, Licensee shall pay Broad a milestone payment in an amount equal to $[**] multiplied by the product of the Valuation Factor multiplied by the Proceeds Factor, until such time as the aggregate payments under this Section 4.3.2.2 (Series B Financing prior to Beam Change of Control) total $[**].

If prior to the payment by Licensee of an aggregate of $[**] to Broad pursuant to this Section 4.3.2.2 (Series B Financing prior to Beam Change of Control), a milestone payment becomes due under this Agreement for achievement by Licensee or any Affiliate or Sublicensee of Licensee of the milestone event described in the table above in Section 4.3.1 (Product Milestone Payments) as [**] becomes due under this Agreement, the unpaid balance of such $[**] shall be paid to Broad on the date such milestone payment or [**], as the case may be, is due.

4.3.2.3 Series B Financing Following Beam Change of Control. Following a Beam Change of Control that occurs prior to the closing of the sale by Licensee in a single transaction or series of transactions, of shares of Series B Preferred Stock yielding aggregate gross proceeds to Licensee of at least [**] dollars ($[**])], then, upon each closing of the sale by Beam (together with its Affiliates for purposes of this Section 4.3.2.3 (Series B Financing Following Beam Change of Control), including the calculation of sales by Beam of shares of Beam Series B Preferred Stock) of shares of Beam Series B Preferred Stock, Licensee shall pay Broad a milestone payment in an amount equal to $[**] multiplied by the product of the Beam Valuation Factor multiplied by the Beam Proceeds Factor, until such time as the aggregate payments under Section 4.3.2.2 (Series B Financing prior to Beam Change of Control) and this Section 4.3.2.3 (Series B Financing Following Beam Change of Control) total $[**].

If prior to the payment by Licensee of an aggregate of $[**] to Broad pursuant to Section 4.3.2.2 (Series B Financing prior to Beam Change of Control) and this Section 4.3.2.3 (Series B Financing Following Beam Change of Control), a milestone payment becomes due under this Agreement for achievement by Licensee or any Affiliate or Sublicensee of Licensee of the milestone event described in the table above in Section 4.3.1 (Product Milestone Payments) as “FSFD in Phase 3 Clinical Study” or a [**] becomes due under this Agreement, the unpaid balance of such $[**] shall be paid to Broad on the date such milestone payment or [**], as the case may be, is due.

4.3.2.4 In no event shall Licensee be required to pay more than $[**] in the aggregate to Broad pursuant to Section 4.3.2.2 (Series B Financing prior to Beam Change of Control) and Section 4.3.2.3 (Series B Financing Following Beam Change of Control).

4.3.3 Licensee shall notify Broad in writing within [**] days following the achievement of each milestone described in Section 4.3.1 (Product Milestone Payments) or 4.3.2 (Financing Milestone Payments), and shall make the appropriate milestone payment within [**] days after the achievement of such milestone.

4.3.4 The milestone payments set forth in Section 4.3.1 (Product Milestone Payments) shall not be payable:

(a) with respect to a subsequent achievement of the same milestone event by a Royalty-Bearing Product that is a replacement for another Royalty-Bearing Product, the development of which has been discontinued after achievement of such same milestone event;

(b) with respect to a subsequent achievement of the same milestone event by any back-up Royalty-Bearing Product that is a Related Product to a first Royalty-Bearing Product that has already achieved such same milestone event; and

(c) with respect to a subsequent achievement of the same milestone event by a Royalty-Bearing Product that differs from a first Royalty-Bearing Product that has achieved such same milestone event only by virtue of such subsequent Royalty-Bearing Product's being a different dosage strength or formulation of or using a different delivery system than such first Royalty-Bearing Product.

4.3.5 The milestones set forth in Section 4.3.1 (Product Milestone Payments) are intended to be successive. If a Royalty-Bearing Product is not required to undergo the event associated with a particular milestone for a given Royalty-Bearing Product ("**Skipped Milestone**"), such Skipped Milestone will be deemed to have been achieved upon the achievement by such Royalty-Bearing Product of the next successive milestone ("**Achieved Milestone**"). Payment for any Skipped Milestone that is owed in accordance with the provisions of Section 4.3.1 (Product Milestone Payments) shall be due within [**] days after the Licensee learned of the achievement of the Achieved Milestone. For clarity, Regulatory Approval in a jurisdiction shall not trigger payment of another Regulatory Approval milestone not yet achieved (for example, First Regulatory Approval in the EU shall not trigger a payment obligation for First Regulatory Approval in the United States as a Skipped Milestone and *vice versa*, and First Regulatory Approval in Japan shall not trigger a payment obligation for First Regulatory Approval in the United States or Europe, nor *vice versa*),

4.4 Royalty on Net Sales.

4.4.1 Rate for Licensed Products. Licensee shall pay Broad an amount equal to [**] percent ([**]%) of Net Sales of Licensed Products, calculated in accordance with and subject to the remainder of this Section 4.4 (Royalty on Net Sales).

4.4.2 Rate for Enabled Products. Licensee shall pay Broad an amount equal to [**] percent ([**]%) of Net Sales of Enabled Products, calculated in accordance with and subject to the remainder of this Section 4.4 (Royalty on Net Sales).

4.4.3 Royalty Term. On a country-by-country and Royalty-Bearing Product by Royalty-Bearing Product basis, royalties shall be paid on the sum of Net Sales of such Royalty-Bearing Product until the latest of: (a) the expiration date of the last to expire Valid Claim within the Patent Rights Covering the applicable Royalty-Bearing Product (or if the last Covering Valid Claim with respect to such Royalty-Bearing Product in such country is a pending Valid Claim, the date such pending Valid Claim ceases to be a Valid Claim; provided, however, that subsequent issuance of such Valid Claim shall again extend the Royalty Term from the date of such issuance to the expiration date of such Valid Claim); (b) the period of regulatory

exclusivity associated with such Royalty-Bearing Product in such country; or (c) [**] years after the First Commercial Sale of such Royalty-Bearing Product in such country (the "**Royalty Term**"). During time periods when the Royalty Term is only in effect in a given country for a given Licensed Product due to clause (c) of the foregoing sentence, then the royalty rate provided for such Licensed Product in such country shall be reduced by [**] percent ([**]%) from that set forth in Section 4.4.1 (Rate for Licensed Products) above for such portions of the Royalty Term for such Licensed Product in such country.

4.4.4 Third Party Royalty Set-Off. On a Licensed Product-by-Licensed Product basis, if Licensee is legally required by a future court order, settlement agreement, contract, or other legally binding written commitment to make payments to a Third Party for a license under or the use of patent rights held by such Third Party that (i) Cover such Licensed Product in a country in the Territory and (ii) are necessary for the commercialization of such Licensed Product in a country in the Territory, then Licensee may offset [**] percent ([**]%) of any running royalty payments on net sales actually paid by Licensee to such Third Party under such third-party license with respect to such patent application(s) or patent(s) with respect to sales of Licensed Products against the running royalty payments that are due to Broad with respect to Net Sales of such Licensed Products in such country; provided that in no event shall (a) the running royalty payments to Broad with respect to such Licensed Products be reduced by more than [**] percent ([**]%) of the amount otherwise due under Section 4.4.1 (Rate for Licensed Products), as may be reduced by Section 4.4.3 (Royalty Term), and (b) with respect to royalties paid to the Third Party solely on the basis of claims of pending patent applications of the third party (and no issued patent claim of the third party covers the applicable Licensed Product), such amounts shall only be offsettable in accordance with the foregoing in this Section 4.4.4 (Third Party Royalty Set-Off) if the Covering pending claim of the third party's pending application would meet the definition of Valid Claim set forth in this Agreement were such pending claim within the Patent Rights as of the Effective Date and (c) the royalty offset provided in this Section 4.4.4 (Third Party Royalty Set-Off) may be applied to any Combination Product for which an adjustment to Net Sales has been made in accordance with Section 4.4.7 (Combination Products), but to avoid doubt only as relates to royalties on patent applications and patents that would apply in the absence of the Other Active Components (third party patent royalties due because of the presence of the Other Active Components shall not be offsettable against adjusted Net Sales of a Combination Product).

4.4.5 Loss of Market Exclusivity. If a Loss of Market Exclusivity exists in a country with respect to a Royalty-Bearing Product, then the royalty rate for such Royalty-Bearing Product in such country shall be reduced by [**] percent ([**]%) of the applicable rate determined pursuant to Section 4.4.1 (Rate for Licensed Products) as may be reduced in Section 4.4.3 (Royalty Term), in the case of a Licensed Product, and Section 4.4.2 (Rate for Enabled Products), in the case of an Enabled Product. In the event that Licensee reasonably believes in good faith that a Loss of Market Exclusivity will exist in a Calendar year with respect to a Royalty-Bearing Product in a country, then Licensee shall provide Broad with written notice describing Licensee's reasonable basis for believing that Loss of Market Exclusivity may exist and Licensee may reduce by [**] percent ([**]%) the applicable royalty rate for such Royalty-Bearing Product in such country for each Calendar Quarter in such Calendar Year. Within [**] days following the end of any Calendar Year in which Licensee has taken the deduction under this Section 4.4.5 (Loss of Market Exclusivity) in a country, Licensee shall determine whether a

Loss of Market Exclusivity actually occurred in such country in such prior Calendar Year, and if it is subsequently determined that a Loss of Market Exclusivity did not exist, then Licensee shall reimburse Broad for any erroneous reductions to royalties owed to Broad in such Calendar Year taken under this Section 4.4.5 (Loss of Market Exclusivity) within [**] days of the end of the applicable Calendar Year.

4.4.6 Royalty Reduction Cap. Notwithstanding anything to the contrary herein, on a country-by-country and Royalty-Bearing Product-by-Royalty-Bearing Product basis, in no event shall the effective royalty rate applied to Net Sales of such Royalty-Bearing Product in such country be reduced as a result of the application of the terms of (a) Section 4.4.4 (Third Party Royalty Set-Off)and Section 4.4.5 (Loss of Market Exclusivity) to less than [**] percent ([**]%) of the applicable rate determined pursuant to Section 4.4.1 (Rate for Licensed Products), as may be reduced by Section 4.4.3 (Royalty Term), in the case of a Licensed Product and (b) Section 4.4.5 (Loss of Market Exclusivity) to less than [**] percent ([**]%) of the applicable rate determined pursuant to Section 4.4.2 (Rate for Enabled Products), in the case of an Enabled Product.

4.4.7 Combination Products. If a Royalty-Bearing Product is sold as part of a combination product with other active pharmaceutical ingredient(s) (or active biologic(s)) that are not Royalty-Bearing Products and perform a function distinct from the Royalty-Bearing Product component of the combination ("**Other Active Component(s)**") (no matter the form, including as a fixed dose combination or co-packaged product offering) for a single invoice price (a "**Combination Product"**), then Net Sales of the Combination Product shall be adjusted prior to calculation of the royalty to Broad hereunder, by multiplying total Net Sales of the Combination Product by the fraction, A/A+B, where A is the [**] and B is the [**], in each case during the applicable royalty reporting period or, if sales of both the Royalty-Bearing Product and the Other Active Component(s) did not occur in such period, then in the most recent royalty reporting period in which sales of both occurred. In the event that such average sale price cannot be determined for both the Royalty-Bearing Product and Other Active Component(s) included in such Combination Product, the Parties shall determine any adjustment to Net Sales of the Royalty-Bearing Product by virtue of its being sold as part of a Combination Product with Other Active Components in such country by mutual agreement based on the relative contribution of value of the Royalty-Bearing Product and the Other Active Component(s) in the Combination Product. If the Parties do not reach written agreement as to such allocation within [**] days, then the matter shall be decided by arbitration in accordance with Exhibit 4.4.7. To avoid doubt, the royalty offset provided in Section 4.4.4 (Third Party Royalty Set-Off) does not allow for the offset of royalties on third party patent applications and patents that are necessary only for the Other Active Component(s), and would not apply to the Royalty-Bearing Product component as a single agent.

4.5 Patent Challenge.

4.5.1 If Licensee, its Affiliate or a Sublicensee takes any action that constitutes a Patent Challenge (a "**Challenging Party**"), then (a) Licensee shall provide Broad with at least [**] days' notice prior to a Challenging Party taking any such action, provided that with respect to a Sublicensee, such notice shall be provided upon Licensee becoming aware of such action, (b) Licensee shall pay all reasonable costs, fees and expenses associated with such

Patent Challenge that are incurred by Institutions and their trustees, managers, officers, agents, employees, faculty, affiliated investigators, personnel, and staff, including reasonable attorneys' fees and all reasonable costs associated with administrative, judicial or other proceedings, within [**] days after receiving an invoice from Broad for the same, (c) subject to Section 4.5.3 (Patent Challenge), the fees, milestones, royalties and other amounts payable to Broad under Sections 4.2 (Annual License Maintenance Fees), 4.3 (Milestone Payments), and 4.4 (Royalty on Net Sales) will be [**] with respect to any payments that become due and Net Sales of Royalty-Bearing Products that are sold during the pendency of such Patent Challenge, and all such payments shall be made directly to Broad and not into escrow, (d) subject to Section 4.5.3 (Patent Challenge), the exclusive licenses granted in this Agreement may, as of the date of initiation of such challenge or opposition, upon notice by Broad to Licensee, be converted by Broad at its option into a non-exclusive license for the remainder of the Term, and in such event the Institutions shall have the right to grant licenses under the Patent Rights to any Person, subject to the then-existing non-exclusive licenses provided herein, and (e) at any time after the Patent Challenge is brought, Broad may, at its option, terminate this Agreement according to Section 10.2.3 (Termination for Patent Challenge); provided that if any of subsections (a) through (e) are held invalid or unenforceable for any reason, such invalidity or unenforceability shall not affect any of the other said subsections. If the outcome of such Patent Challenge is a determination against the Challenging Party, the fees, milestones, royalties and other amounts payable to Broad under Sections 4.2 (Annual License Maintenance Fees), 4.3 (Milestone Payments), and 4.4 (Royalty on Net Sales) shall remain at such [**] rate and Licensee shall reimburse Broad [**] the amount of all reasonable expenses incurred by Broad (including reasonable attorneys' fees) in connection with such Patent Challenge. If the outcome of such Patent Challenge is a determination in favor of the Challenging Party, Licensee will have no right, nor will any Affiliate or Sublicensee have any right, to recoup any royalties or other amounts paid before or during the pendency of such Patent Challenge. Notwithstanding any provision of this Agreement to the contrary, Licensee shall not have the right to assume or participate in the defense, settlement or other disposition of such Patent Challenge through its status as licensee under this Agreement, but shall pay associated costs, fees and expenses as provided in this Section 4.5.1 (Patent Challenge). The Parties agree that any Patent Challenge by Licensee, or any of its Affiliates or Sublicensees, may be detrimental to the Institutions, and that the foregoing provisions shall constitute reasonable liquidated damages to reasonably compensate the Institutions for any loss they may incur as a result of Licensee, or any of its Affiliates' or Sublicensees', taking such action.

4.5.2 Licensee shall include in each agreement for a Sublicense a clause equivalent with respect to the Sublicensee to the provisions found in the foregoing Section 4.5.1 (Patent Challenge) (adjusted for party names, section references, and the like) and shall make the Institutions explicit third party beneficiaries thereof.

4.5.3 Notwithstanding Section 4.5.1 (Patent Challenge), if the Challenging Party that takes an action that constitutes a Patent Challenge is a Sublicensee rather than Licensee or an Affiliate, then, the adjustment contemplated under Section 4.5.1 (Patent Challenge) to the fees, milestones, royalties and other amounts payable to Broad under Sections 4.2 (Annual License Maintenance Fees), 4.3 (Milestone Payments), and 4.4 (Royalty on Net Sales) shall apply only to the calculation of royalties on Net Sales by such challenging Sublicensee and the adjustment to the milestone payments under Section 4.3 (Milestone

Payments) with respect to Royalty-Bearing Products achieved by Sublicensees shall apply only to the milestone payments with respect to Royalty-Bearing Products achieved by such challenging Sublicensee. Licensee will make Broad an explicit intended third-party beneficiary of the obligation in the Sublicense agreement for the Sublicensee to pay Broad [**] the amount of all expenses incurred by Broad (including reasonable attorneys' fees) in connection with such Patent Challenge, and will reasonably assert its rights under the Sublicense for such [**] payments to be made, and reasonably cooperate with Broad if Broad takes enforcement actions of its own as to such right to [**] payment. Notwithstanding Section 4.5.1 (Patent Challenge), if the Challenging Party that takes an action that constitutes a Patent Challenge is solely a Sublicensee and not Licensee or its Affiliates, Broad shall not have the right to convert Licensee's exclusive licenses to non-exclusive licenses as contemplated by clause (d) of Section 4.5.1 (Patent Challenge) if Licensee terminates the Sublicense of such Sublicensee within [**] days of receiving notice of such challenge; provided that, neither Licensee nor its Affiliates assist or participate in the Patent Challenge either prior to or after such termination.

To avoid doubt, the fees, milestones, royalties and other amounts owed by Licensee and its Affiliates and Sublicensees who are not Challenging Parties shall not be [**] under Section 4.5.1 (Patent Challenge) as a result of Patent Challenge actions by an unrelated Sublicensee Challenging Party.

4.6 Non-Royalty Sublicense Income. Licensee will pay Broad a percentage in accordance with the following table of all Non-Royalty Sublicense Income, without deduction (other than as provided in the definition of Non-Royalty Sublicense Income in Section 1.111 ("Non-Royalty Sublicense Income")); provided, however, that Licensee may deduct from Non-Royalty Sublicense Income received by Licensee as a result of the achievement by a Sublicensee of a milestone event set forth in Section 4.3.1 (Product Milestone Payments) the amount of the corresponding milestone payment due Broad under Section 4.3.1 (Product Milestone Payments) in connection with the achievement of such milestone event. For the avoidance of doubt, in the event any Sublicensee transfers rights granted or transferred by Broad under this Agreement along with rights owned by the Licensee or granted to the Licensee by a Third Party, Licensee shall pay to Broad the following percentages of all Non-Royalty Sublicense Income received by Licensee or its Affiliates under such Sublicense without deduction from or apportionment of any part of such consideration. Licensee agrees that all rights controlled by Licensee and reasonably expected to be relevant at the given time to make, use, sell, offer to sell or import particular Royalty-Bearing Products shall be included in or deemed to be included in the same Sublicense under which the rights granted or otherwise transferred to Licensee hereunder are granted with respect to such Royalty-Bearing Product for the purpose of calculating Non-Royalty Sublicense Income.

Category of Sublicense	*Percentage of Non-Royalty Sublicense Income*
(a) With respect to a Sublicense executed [**]	[**]%
(b) With respect to a Sublicense executed [**]	[**]%
(c) With respect to a Sublicense executed [**]	[**]%

Subject to Section 1.111 ("Non-Royalty Sublicense Income"), in the case of Non-Royalty Sublicense Income received in kind in the form of a freely transferable security (except for such restrictions on transfer imposed by Applicable Law), Licensee shall nonetheless distribute the applicable Non-Royalty Sublicense Income to Broad in the form of cash.

4.7 Complex Consideration. Licensee acknowledges and agrees that the Parties have chosen to apply set royalty rates and milestone payments to the rights granted under this Agreement for Licensee's convenience in calculating and paying royalties and milestones. In doing so, Licensee acknowledges and agrees that certain royalty rates and milestones payments chosen incorporate discounts reflecting that certain products and services may not be Covered by the Valid Claims of the Patent Rights but may be based upon, derived from or use the Patent Rights or other licensed intellectual property rights, so that Licensee, unless explicitly provided otherwise in this Agreement, shall not be entitled to a reduction in the royalty rate or milestone payment, even if it does not at all times need or use a license to specific Patent Rights, until the end of the Royalty Term for such product or service.

4.8 Success Payments. Licensee shall make such payments (each, a "[**]" and collectively, the "[**]") as are determined in accordance with Exhibit 4.8 hereto.

4.9 Assumption of Obligations. Any acquirer, lessee, exclusive licensee or other transferee of all or substantially all of the Licensee's assets, or any successor entity to the Licensee (each, an "Acquirer"), shall be obligated to assume and guarantee the Licensee's obligations pursuant to Article 4 and Exhibit 4.8 hereto, as such obligations are set forth herein and therein and subject to the terms and conditions (including contingent events) set forth herein and therein. For the avoidance of doubt, following a Beam Change of Control, Beam shall be deemed an Acquirer under this Agreement.

5. Reports; Payments; Records.

5.1 Reports and Payments.

5.1.1 Reports. Within [**] days after the conclusion of each Calendar Quarter commencing with the first Calendar Quarter in which Net Sales are generated or Non-Royalty Sublicense Income is received, Licensee shall deliver to Broad a report containing the following information (in each instance, with a Royalty-Bearing Product-by-Royalty-Bearing Product and country-by-country breakdown):

5.1.1.1 the number of units of Royalty-Bearing Products sold, leased or otherwise transferred by Invoicing Entities for the applicable Calendar Quarter;

5.1.1.2 the gross amount billed or invoiced for Royalty-Bearing Products sold, leased or otherwise transferred by Invoicing Entities during the applicable Calendar Quarter;

5.1.1.3 a calculation of Net Sales for the applicable Calendar Quarter, including an itemized listing of allowable deductions;

5.1.1.4 a detailed accounting of all Non-Royalty Sublicense Income received during the applicable Calendar Quarter, including an itemized listing of allowable exclusions, as well as a reasonably detailed description of any profit share arrangement, as applicable;

5.1.1.5 the total amount payable to Broad in U.S. Dollars on Net Sales and Non-Royalty Sublicense Income for the applicable Calendar Quarter, together with the exchange rates used for conversion; and

5.1.1.6 a good faith list of [**] for all Patent Rights that have Valid Claims covering the Licensed Products;

provided that, Licensee shall use reasonable efforts to include in each Sublicense a provision requiring the Sublicensee to provide the information required under this Section 5.1.1 (Reports) and provided further that, to the extent that the information set forth on such report is provided by a Sublicensee, Licensee shall, notwithstanding anything to the contrary in this Section 5.1 (Reports and Payments), provide such report within [**] days after the conclusion of each such Calendar Quarter and in any event shall promptly provide such report from Sublicensee to Broad following Licensee's receipt of such. Each such report shall be certified on behalf of Licensee as true, correct and complete in all material respects. If no amounts are due to Broad for a particular Calendar Quarter, the report shall so state. Broad may reasonably request further information regarding the calculation of payments under any report and Licensee will consider such reasonable requests in good faith.

5.1.2 Payment. Within [**] days after the end of each Calendar Quarter, Licensee shall pay Broad all amounts due with respect to Net Sales and Non-Royalty Sublicense Income for the applicable Calendar Quarter; provided, however, that for royalties to Broad on Net Sales by Sublicensees, Licensee shall have until the earlier of (a) [**] business days after receiving the quarterly royalty payment from the Sublicensee and (b) [**] days after the end of the applicable Calendar Quarter to turn around payment to Broad on the underlying Net Sales.

5.2 Payment Currency. All payments due under this Agreement will be paid in U.S. Dollars. Conversion of foreign currency to U.S. Dollars will be made at the conversion rate existing in the United States (as reported in the Wall Street Journal) on the last working day of the applicable Calendar Quarter. Such payments will be without deduction of exchange, collection or other charges. Notwithstanding the foregoing, a reasonable and customary currency conversion methodology as is set forth in a Sublicense agreement shall be the method used for currency conversion of amounts due in relation to such Sublicense agreement, provided that such conversion methodology governs payments received by Licensee under such Sublicense agreement.

5.3 Records. Licensee shall maintain, and shall cause its Affiliates and Sublicensees to maintain, complete and accurate records of Royalty-Bearing Products that are made, used, sold, leased or transferred under this Agreement, any amounts payable to Broad in relation to such Royalty-Bearing Products, and all Non-Royalty Sublicense Income received by Licensee and its Affiliates, which records shall contain sufficient information to permit Broad to confirm the accuracy of any reports or notifications delivered to Broad under Section 5.1 (Reports and Payments). Licensee and its Affiliates shall, and shall use reasonable efforts to require its Sublicensees to, as applicable, retain such records relating to a given Calendar Quarter for at least [**] years after the conclusion of that Calendar Quarter; provided that Licensee shall require that its Sublicensees retain such records relating to a given Calendar Quarter for no fewer than [**] years after the conclusion of that Calendar Quarter (the "**Record Retention Period**").

5.3.1 Audit of Licensee and Affiliates. During the Record Retention Period, Broad will have the right, at its expense, to cause an independent, certified public accountant (or, in the event of a non-financial audit, other appropriate auditor) chosen by Broad to inspect such records during normal business hours for the purposes of verifying the accuracy of any reports and payments delivered under this Agreement and Licensee's compliance with the terms hereof. Such accountant or other auditor, as applicable, shall be under reasonable written obligations of confidentiality to the audited party and shall not disclose to Broad any information other than information relating to the accuracy of reports and payments delivered under this Agreement. In addition, the auditor shall disclose its draft conclusions to Licensee and Broad, and the basis for such conclusions to Licensee, prior to making its final report to Broad, and shall be instructed to read the Licensee's comments in response thereto (if any). The accounting records as to any accounting period shall not be audited more than [**] per accounting period, nor more than [**] years after the end of such accounting period. The Parties shall reconcile any underpayment or overpayment within [**] days after the accountant delivers the results of the audit. If any audit performed under this Section 5.3 (Records) reveals an underpayment in excess of [**] percent ([**]%) in any Calendar Year, Licensee shall reimburse Broad for all amounts incurred in connection with such audit. Broad may exercise its rights under this Section 5.3 (Records) only [**] every year per audited entity and only with reasonable prior notice to the audited entity.

5.3.2 Audit of Sublicensees. Notwithstanding the foregoing, provided that the Licensee obtains an [**] audit right for itself with respect to a Sublicensee's records, as well as the right to share the results of such audit with Broad, the Licensee shall not be required to obtain from such Sublicensee a direct audit right for Broad. During the Record Retention Period, Broad shall have the right, at its expense, to require Licensee to make available to an independent, certified public accountant (or, in the event of a non-financial audit, other appropriate auditor) chosen by Broad, during normal business hours, such information as Licensee has in its possession with respect to reports and payments from Sublicensees for the purposes of verifying the accuracy of any reports and payments delivered under this Agreement and Licensee's compliance with the terms hereof. If such information as Licensee has in its possession is not sufficient for such purposes, Broad shall have the right, at its expense, in any Calendar Year in which Licensee would not otherwise exercise its right to audit a given Sublicensee, to cause Licensee to exercise such audit right. If Licensee does not have the right to conduct an audit of such Sublicensee for the relevant Calendar Year, Licensee and Broad shall meet and use reasonable efforts to agree on an appropriate course of action. The Parties shall reconcile any underpayment or overpayment within [**] days the applicable accountant delivers the results of the audit. If any audit performed under this Section 5.3.2 (Audit of Sublicensees) reveals an underpayment (either by the Sublicensee alone or when taken together with all other contemporaneous audits conducted by or at the request of Broad) to Broad in excess of [**] percent ([**]%) in any Calendar Year, Licensee shall reimburse Broad for all amounts incurred in connection with such audit.

5.4 Late Payments. Any payments by Licensee that are not paid on or before the date such payments are due under this Agreement will bear interest at the lower of (a) [**] percent ([**]%) per month (to be pro-rated for any partial month) and (b) the maximum rate allowed by law. Interest will accrue beginning on the first day following the due date for payment and will be compounded [**]. Payment of such interest by Licensee shall not limit, in any way, Broad's right to exercise any other remedies Broad may have as a consequence of any payment due but unpaid hereunder.

5.5 Payment Method. Each payment due to Broad under this Agreement shall be paid by check or wire transfer of funds to Broad's account in accordance with written instructions provided by Broad. If made by wire transfer, such payments shall be marked so as to refer to this Agreement.

5.6 Withholding and Similar Taxes. All amounts to be paid to Broad pursuant to this Agreement shall be without deduction of exchange, collection, or other charges, and, specifically, without deduction of withholding or similar taxes or other government imposed fees or taxes, except as permitted in the definition of Net Sales; provided that Licensee shall be entitled to make payment to an account of Broad held in the United States.

6. Patent Filing, Prosecution and Maintenance.

6.1 Control. Subject to Section 7.7 (Declaratory Judgment), Broad shall be responsible for the preparation, filing, prosecution, protection, defense, issuance and maintenance of all Patent Rights, including oppositions, *inter partes* reviews, interferences, post-grant reviews and similar proceedings before any patent office (or appeals therefrom) (collectively, the "**Prosecution**"). Broad shall: (a) choose patent counsel; (b) instruct such patent counsel to furnish the Licensee with copies of all correspondence relating to the DNA Cleaving Patent Rights or the Base Editor Patent Rights received from and sent to the United States Patent and Trademark Office (USPTO) and any other patent office, as well as copies of all proposed responses to such correspondence received from any patent office in time for Licensee to review and comment on such response; (c) supply Licensee with a copy of the application as filed, together with notice of its filing date and serial number; (d) supply Licensee with a draft copy of proposed preliminary amendments to be filed subsequent to the filing of a non-provisional application within the DNA Cleaving Patent Rights or the Base Editor Patent Rights on the express condition that Licensee will not propose any claim amendment or new claim that it believes, or has reason to believe, would result in the addition of any new inventor(s) to the application in question; and (e) keep Licensee advised of the status of actual patent filings related to the DNA Cleaving Patent Rights and the Base Editor Patent Rights. Broad shall give Licensee the opportunity to provide comments on and make requests of Broad concerning the Prosecution of the DNA Cleaving Patent Rights and the Base Editor Patent Rights and shall consider such comments and requests in good faith; [**]. [**], Broad shall allow Licensee to propose claims to pose in draft applications prior to filing and will consider the proposed claims in good faith.

6.1.2 Broad shall provide notice to Licensee in the event Prosecution of the Patent Rights involves an interference or derivation proceeding. Upon declaration of any such interference or initiation of any such derivation proceeding, Licensee's rights under Section 6.1 (Control), including the right to receive correspondence to or from a patent office and the right to review draft responses, shall be suspended with respect to the Patent Rights involved in the interference or derivation proceeding. Notwithstanding the foregoing, any such interference or derivation proceeding is considered Prosecution of the Patent Rights and Licensee remains responsible for [**] in connection with such Prosecution, including costs and expenses associated with settlement or attempts to settle the interference. Notwithstanding the foregoing, if Licensee does not have an interest, such as by ownership, license or opinion, in opposing patents or applications involved in the interference or derivation proceeding, Broad shall enter into a common interest agreement to facilitate the sharing of the materials set forth in Section 6.1 (Control) with the Licensee.

6.1.3 Notwithstanding the foregoing, if Licensee, its Affiliates or Sublicensees is or becomes a Challenging Party, then Licensee's rights to participate in Prosecution under Section 6.1 (Control), including the right to receive correspondence to or from a patent office and the right to review draft responses, shall be suspended during the pendency of the relevant Patent Challenge with respect both to the Patent Rights that are the subject of the Patent Challenge and to any related Patent Rights.

6.1.4 No later than [**] days prior to the deadline for entering into the national/regional phase with respect to any PCT application included in the Patent Rights, Licensee shall provide Broad with a list of countries in which Licensee would like Broad to file the patent application (each, a "**List of Countries**"). Broad shall consider each List of Countries in good faith and, except as provided below in this Section 6.1.4 (Control), shall file national/regional phase applications in all countries on each List of Countries. Notwithstanding anything to the contrary contained in this Agreement, and without intending to limit any of Broad's rights hereunder, Broad expressly reserves the right (i) to decline to initiate Prosecution of any of the Patent Rights in a Developing Country(ies) (excluding Brazil, China and India) included on a List of Countries or (ii) to initiate, and in its discretion, continue Prosecution of any of the Patent Rights in a Developing Country(ies) (excluding Brazil, China and India) whether or not included on a List of Countries at Broad's expense, provided that Broad provides Licensee with [**] days' advance notice of its intention to take the action described in the foregoing clause (i) or (ii), provides Licensee an opportunity for Licensee to meet with Broad to discuss, and reasonably considers Licensee's comments regarding such intention. Broad shall thereafter notify Licensee of the taking of any action described in the foregoing clause (i) or (ii) at least [**] days before the taking of such action. If Broad takes the action described in clause (ii) of the immediately preceding sentence, then Broad expressly reserves the right, upon notice to Licensee, either (A) to remove the applicable Patent Right in such Developing Country(ies) from the scope of the licenses granted pursuant to Section 2.1.1 (License Grants) and Section 2.1.2 (License Grants), effective upon such notice, or (B) treat the applicable Patent Right as an Abandoned Patent Right, in which case under this clause (B) all licenses granted to the Licensee under such Patent Right in such Developing Country(ies) shall terminate upon such notice; whereupon Broad shall be free, without further notice or obligation to Licensee, to grant non-exclusive or exclusive rights in and to such Patent Right to Third Parties for all purposes within such Developing Country(ies). Further, Broad may, in its sole discretion, file additional

national/regional phase applications (the "**Additional National Stage Filings**") in countries not included on a List of Countries provided by Licensee, and all expenses, including translation fees associated with Prosecution of such Additional National Stage Filings shall be expenses associated with Prosecution under this Agreement, in accordance with Section 6.3 (Expenses). If Licensee does not wish to reimburse Broad for all expenses associated with Prosecution of such Additional National Stage Filings, such Additional National Stage Filings shall be deemed Abandoned Patent Rights and treated in accordance with Section 6.4.1 (Abandonment by Licensee).

6.2 Common Interest. All non-public information disclosed by Broad or its outside patent counsel to Licensee regarding Prosecution of the Patent Rights, including [**], shall be deemed Broad Confidential Information (either for itself or on behalf of another Institution, as applicable). In addition, the Parties acknowledge and agree that, with regard to such Prosecution of the Patent Rights, the interests of the Parties as licensor and licensee are aligned and are legal in nature. The Parties agree and acknowledge that they have not waived, and nothing in this Agreement constitutes a waiver of, any legal privilege concerning the Patent Rights or their Confidential Information, including privilege under the common interest doctrine and similar or related doctrines.

6.3 Expenses. [**]. In addition, subject to Section 6.4 (Abandonment) below, Licensee shall reimburse Broad for [**] documented, out-of-pocket expenses, including attorneys' fees, translation costs and official fees, incurred by Broad in the Prosecution of the Patent Rights pursuant to this Article 6, incurred after the Effective Date within [**] days after the date of each invoice from Broad for such expenses. In the event that after the Effective Date, Broad enters into an exclusive license with a third party with respect to (a) any of the Base Editor Patent Rights (other than Product-Specific Base Editor Patent Rights) or DNA Cleaving Patent Rights outside the Field or (b) any of the Product-Specific Base Editor Patent Rights or Gene Targeting Patent Rights outside the Field or for products other than Base Editor Products, then Broad shall use reasonable efforts to secure a provision under such license that provides for payment of an appropriate portion of past and future expenses related to such Patent Rights by such licensee at the time such expenses are incurred, taking into consideration the scope of such license. In the event that Broad is able to collect such amounts, Broad shall credit Licensee for the applicable share previously paid by Licensee for past expenses and Licensee shall thereafter be obligated to only pay its applicable share of such expenses.

6.4 Abandonment.

6.4.1 Abandonment by Licensee. If Licensee decides that it does not wish to pay for the Prosecution of any Patent Rights in a particular country, then Licensee shall provide Broad with prompt written notice of such election and upon such written notice, the Patent Rights that were the subject of the notice, solely in the countries identified in the notice for such Patent Rights, shall be "**Abandoned Patent Rights.**" Upon receipt of such notice by Broad, Licensee shall be released from its obligation to reimburse Broad for the expenses incurred thereafter as to such Abandoned Patent Rights; provided, however, that expenses authorized prior to the receipt by Broad of such notice that cannot be cancelled as of the date of the notice shall be deemed incurred prior to the notice. Any license granted by Broad to Licensee hereunder with respect to any Abandoned Patent Rights will terminate, and Licensee will have

no rights whatsoever to exploit such Abandoned Patent Rights. Broad will then be free, without further notice or obligation to Licensee, to grant rights in and to such Abandoned Patent Rights to third parties without limitation. In addition, if Abandoned Patent Rights represent substantially all the material patentable claims within a Sub-Category of Base Editor Patent Rights or a Sub-Category of the Gene Targeting Patent Rights, Broad shall have the right to grant to third party licensees of such Abandoned Patent Rights within such Sub-Category, a non-exclusive license under the Patent Rights solely to make, have made, offer for sale, sell, have sold and import products, including Base Editor Products, that are claimed or covered by Patent Rights within such Sub-Category in any field solely in the countries applicable to such Abandoned Patent Rights, which non-exclusive license shall not extend to components of such products that are a different category of Base Editor than the category of Base Editor that is the subject matter of such Abandoned Patent Rights (for non-limiting example, [**]). For clarity, Abandoned Patent Rights are defined on a country-by-country basis, not a worldwide basis, and Licensee shall retain its rights in all other countries to the Patent Rights that are counterparts in other countries to the Abandoned Patent Rights (and the non-exclusive licenses referred to in this paragraph shall not extend to such other countries).

6.4.2 Abandonment by Broad. Broad agrees to maintain any application or patent within the Patent Rights for as long as (a) Licensee continues to meet its obligation to reimburse expenses associated with such application or patent in accordance with Section 6.3 (Expenses) and (b) there is a good faith basis for doing so. In the event that Broad is permitted under this Section 6.4.2 (Abandonment by Broad) to cease Prosecution of an application or patent within the Patent Rights and elects to do so, it shall notify Licensee at least [**] prior to ceasing Prosecution for such Patent Right and shall discuss such proposed action with Licensee in good faith. For the avoidance of doubt, this Section 6.4.2 (Abandonment by Broad) shall not apply and shall not limit Broad's right to cease Prosecution of a given application within the Patent Rights in lieu of a divisional, continuation or continuation-in-part application that is also within the Patent Rights.

6.5 Marking. Licensee shall, and shall cause its Affiliates and Sublicensees to, mark all Royalty-Bearing Products sold or otherwise disposed of in such a manner as to conform with the patent laws and practice of the country to which such products are shipped or in which such products are sold for purposes of ensuring maximum enforceability of Patent Rights in such country.

6.6 CREATE Act. No Party shall have the right to use this Agreement as a joint research agreement to make an election under the Cooperative Research and Technology Enhancement Act of 2004, 35 U.S.C. 103(c)(2)-(c)(3), as amended by the America Invents Act and set forth in 35 U.S.C. 102(b)(2)(C) and 102(c), without the prior written consent of each other Party having an ownership interest in a patent or patent application involved in such election, such consent to be granted or withheld in the sole discretion of each such other Party.

7. Enforcement of Patent Rights.

7.1 Notice. In the event either Party becomes aware of any possible or actual infringement of any Patent Rights with respect to Licensed Products, that Party shall promptly notify the other Party and provide it with details regarding such Infringement.

7.2 Suit by Licensee. So long as Licensee remains the exclusive licensee of the DNA Cleaving Patent Rights or the Base Editor Patent Rights (other than the Product-Specific Base Editor Patent Rights) with respect to a Licensed Product in the Field, or the exclusive licensee of the Gene Targeting Patent Rights or the Product-Specific Base Editor Patent Rights with respect to a Licensed Product that is a Base Editor Product in the Field, Licensee shall have the first right, but not the obligation, to institute infringement suits under the Patent Rights with respect to such Licensed Product in the Field where Licensee reasonably determines that a Third Party is marketing or has specific plans and is preparing to market an infringing product in any country that competes with such Licensed Product in the Field ("**Infringement**"); provided that prior to initiating action against the Third Party with respect to such Infringement, Licensee has provided evidence to Broad and other Institutions, as applicable, that there is a good faith basis for doing so. Notwithstanding anything to the contrary contained herein with respect to any Infringement, if Licensee owns one or more patents that cover the allegedly infringing product ("**Other IP**"), Licensee shall not initiate action under the Patent Rights unless it (i) also asserts [**] of such Other IP or (ii) obtains written consent from Broad. Licensee shall use the same degree of diligence in prosecuting such Infringement as it uses or would use in prosecuting infringement of its own patent rights. Notwithstanding anything to the contrary contained herein with respect to any Infringement, Licensee's right to enforce the Gene Targeting Patent Rights and the Product-Specific Base Editor Patent Rights shall be limited solely to those claims of the Gene Targeting Patent Rights and the Product-Specific Patent Rights that are expressly limited in scope to Base Editing unless Licensee obtains written consent from Broad.

7.2.1 Before Licensee commences an action with respect to any Infringement, Licensee shall give Broad no less than [**] days' advance written notice, and Licensee shall consult with Broad and the other Institutions, as applicable, and, to the extent feasible, any other exclusive licensee of the applicable Patent Rights who have a right to enforce such Patent Rights outside of the Field, upon such exclusive licensee's request, subject, in the case of any such other exclusive licensee to an obligation of confidentiality that apply to such other licensee that is no less strict than that set forth herein, with respect to its proposed course of action to address the Infringement and Licensee shall consider in good faith the views and concerns (if any) of Broad, the other Institutions, and, as applicable, other exclusive licensees of such Patent Rights outside of the Field, and potential effects on the public interest in making its decision whether to take such action, especially with regard to the locally affordable availability of Licensed Products or equivalents thereof, e.g., generic products, in Developing Countries. Notwithstanding the foregoing or anything to the contrary contained in this Agreement, Licensee agrees that, consistent with Section 6.1 (Control), Broad shall hold final decision-making authority, to be exercised in good faith, on a case-by-case basis, as to whether Licensee shall be permitted to enforce the Patent Rights in any Developing Country.

7.2.2 Should Licensee elect (and, where consent of Broad is required, be permitted) to take action against an actual or potential infringer, Licensee shall select counsel reasonably acceptable to Broad, shall keep Broad and other Institutions, as applicable, reasonably informed of the progress of the action and shall give Broad and other Institutions, as applicable, a reasonable opportunity in advance to consult with Licensee and offer its views about major decisions affecting the action. Licensee shall give careful consideration to those views, but shall have the right to control the action; provided, however, that if Licensee fails to defend in good faith the validity or enforceability of the Patent Rights in the action, or if

Licensee's exclusive license to a Valid Claim in the suit terminates pursuant to Section 10.2 (Termination), or if infringement in the Field terminates, Broad may elect to take control of the action pursuant to Section 7.3 (Suit by Broad). The expenses of Licensee with respect to any suit or suits that Licensee elects to bring in accordance with this Section 7.2 (Suit by Licensee) shall be paid for entirely by Licensee. If required under Applicable Law to establish standing for the initiation or maintenance of such infringement action by Licensee, (a) Broad and other Institutions, as applicable, shall, upon request of Licensee or as required by a court or procedural rules, or may voluntarily, join or be joined as a party to such action, provided that neither Broad nor another Institution, as applicable, shall be the first named party in such action, (b) Licensee shall hold Broad (and other Institutions, if applicable) free, clear and harmless from and against any and all costs and expenses, including attorneys' fees, incurred in conjunction with the prosecution, adjudication, defense, management or settlement of, or joinder to, such suits and any related appeals, remands or other related proceedings ("**Litigation Expenses**"), (c) Licensee shall reimburse any and all Litigation Expenses incurred by Broad (and other Institutions, if applicable) within [**] days after receiving an invoice (including a copy of detailed time and expense entries from attorneys) from Broad (and other Institutions, if applicable) for same and (d) Licensee shall hold Broad (and other Institutions, if applicable) free, clear and harmless from and against any and all Litigation Expenses incurred by Broad (or other Institutions, if applicable). Licensee shall not compromise or settle such litigation without the prior written consent of Broad (subject to concurrence of other Institutions, as applicable), which shall not be unreasonably withheld or delayed. In the event Licensee exercises its right to sue pursuant to this Section 7.2 (Suit by Licensee), then out of any sums recovered in such suit or in settlement thereof, such recoveries shall first be used to reimburse Licensee for its Litigation Expenses incurred in the prosecution of any such suit. If, after such reimbursement, any funds remain from said recovery, then Broad shall receive an amount of such remaining funds equal to the applicable percentage in Section 4.6 (Non-Royalty Sublicense Income) had the infringer been a Sublicensee instead (and such recovery was Non-Royalty Sublicense Income paid under a Sublicense executed on the effective date of such settlement or the date of entry of judgment by the court awarding such recovered sums, whichever is applicable), and the remainder of such funds shall be retained by Licensee.

7.3 Suit by Broad. If Licensee does not take action in the prosecution, prevention, or termination of any Infringement pursuant to Section 7.2 (Suit by Licensee) above, and has not commenced negotiations with the suspected infringer for the discontinuance of said Infringement, within [**] days after receipt of notice of the existence of an actual Infringement, then Broad may elect to do so. Broad shall give due consideration to Licensee's reasons for not initiating a lawsuit or otherwise making or prosecuting a claim. Subject to Section 7.2 (Suit by Licensee), any and all expenses, including reasonable attorneys' fees, incurred by Broad with respect to the prosecution, adjudication or settlement of such suit in accordance with this Section 7.3 (Suit by Broad), including any related appeals, shall be paid for entirely by Broad. In the event Broad exercises its right to sue pursuant to this Section 7.3 (Suit by Broad), out of any sums recovered in such suit or in settlement thereof, such expenses incurred by Broad shall be first reimbursed and then Licensee shall receive [**] percent ([**]%) of the remaining funds, with the remainder of such funds to be retained by Broad.

7.4 Own Counsel. The party initiating the suit shall have the sole and exclusive right to elect counsel for any suit initiated by it pursuant to Section 7.2 (Suit by Licensee) or Section 7.3 (Suit by Broad); provided that such counsel is reasonably acceptable to the other Party. Each Party shall have the right to participate in and be represented by counsel of its own selection and at its own expense in any suit instituted under this Article 7 by the other Party for Infringement.

7.5 Cooperation. Each Party agrees to cooperate fully in any action under this Article 7 that is controlled by the other Party, including executing legal papers and cooperating in the prosecution as may be reasonably requested by the controlling Party; provided that the controlling Party reimburses the cooperating Party promptly for any costs and expenses incurred by the cooperating Party in connection with providing such assistance within [**] days after receiving an invoice from the cooperating Party for same.

7.6 Patent Validity Challenge. Each Party shall promptly notify the other Party in the event it receives notice of any legal or administrative action by any Third Party against a Patent Right, including any opposition, nullity action, revocation, *inter partes* review, post-grant review, compulsory license proceeding or declaratory judgment action. Any such actions are Prosecution of the Patent Rights and shall be addressed as provided in Section 6.1 (Control) and Section 6.3 (Expenses).

7.7 Declaratory Judgment. If a declaratory judgment action is brought naming Licensee or any of its Affiliates or Sublicensees as a defendant and alleging invalidity or unenforceability of any claims within the Patent Rights, Licensee shall promptly notify Broad in writing. Similarly, if Broad is named as a defendant in a declaratory judgment action related to the Patent Rights, Broad shall promptly notify Licensee in writing. In either case, Broad may elect, upon written notice to Licensee (such written notice to be given within [**] days after Broad receives notice of the commencement of such action, in the case of actions of which Licensee notifies Broad) to conduct or to take over the sole defense of the invalidity or unenforceability aspect of the action at Licensee's expense in accordance with Section 6.3 (Expenses). In such event, Broad shall keep Licensee fully informed in advance of the strategy in responding to such declaratory judgment action, the Parties shall enter into a common interest/joint defense agreement as appropriate (which shall not be in conflict with this Agreement), and Broad shall reasonably consult with and consider the comments of Licensee and its counsel. If Broad does not promptly elect to conduct the defense or take over the defense of the applicable suit (or portion thereof), then it shall so notify the Licensee and, upon Licensee's request, the Parties shall discuss in good faith Broad's reasons for not conducting such defense and the possibility of Broad permitting Licensee to conduct the defense at Licensee's expense, and if Licensee does so conduct such defense, Broad shall reasonably cooperate with Licensee in relation thereto. The rights granted to Broad under this Section 7.7 (Declaratory Judgment) shall be in addition to any rights granted under Section 6.1 (Control) and Section 6.3 (Expenses). In the event that after the Effective Date, Broad enters into an exclusive license with a Third Party with respect to any of the Patent Rights outside the Field, then Broad shall use reasonable efforts to secure a provision under such license that provides for payment of an appropriate portion of past and future expenses related to such Patent Rights under this Section 7.7 (Declaratory Judgment) by such licensee at the time such expenses are incurred, taking into consideration the scope of such license. In the event that Broad is able to collect such amounts, Broad shall credit Licensee for the applicable share previously paid by Licensee for past expenses under this Section 7.7 (Declaratory Judgment) and Licensee shall thereafter be obligated to only pay its applicable share of such expenses under this Section 7.7 (Declaratory Judgment).

7.8 Actions Against Infringement Outside the Field. Prior to taking action to enforce any Patent Rights against infringement outside the Field, Broad shall, and shall cause its exclusive licensees of the applicable Patent Rights who have a right to enforce such Patent Rights outside of the Field, to the extent feasible and consistent with any obligations of confidentiality that apply to Broad or such exclusive licensee, give Licensee no less than [**] days' advance written notice. Promptly after such notice, if requested by Licensee, Broad shall, and shall cause its exclusive licensee of the applicable Patent Right to, meet and confer with Licensee, subject to any obligations of confidentiality that apply to Broad or such licensee, and consider in good faith Licensee's views and concerns (if any) related to the potential enforcement action.

7.9 Licensee Actions in Support of Affiliates and Sublicensees. Unless, based on the advice of counsel to Broad, it is reasonably likely to adversely affect attorney-client privilege, it is understood that the Licensee may, upon [**] days prior written notice to Broad, exercise its rights under this Article 7 in support of its Affiliates and Sublicensees, and may seek the comments and financial support of Affiliates and Sublicensees on patent prosecution and enforcement, and may make comments and seek to enforce Patent Rights in accordance with this Article 7 to protect the interests of its Affiliates and Sublicensees, in addition to the Licensee's own interests.

7.10 RESERVED

8. Warranties and Covenant: Limitation of Liability.

8.1 Compliance with Law. Licensee represents and warrants that it will comply, and will ensure that its Affiliates and Sublicensees comply, with all Applicable Law, including all local, state, federal and international laws and regulations relating to the development, manufacture, use, sale and importation of Royalty-Bearing Products. Without limiting the foregoing, Licensee represents and warrants, on behalf of itself and its Affiliates and Sublicensees, that it shall comply with all Applicable Laws and regulations controlling the export of certain commodities and technical data, including without limitation all Export Administration Regulations of the United States Department of Commerce. Among other things, these laws and regulations prohibit or require a license for the export of certain types of commodities and technical data to specified countries. Licensee hereby gives written assurance that it will comply with, and will cause its Affiliates to comply with (and will contractually obligate its Affiliates and Sublicensees to comply with), all applicable United States export control laws and regulations, that as between the Parties it bears sole responsibility for any violation of such laws and regulations by itself or its Affiliates or Sublicensees, and that it will indemnify, defend, and hold Indemnitees harmless (in accordance with Section 9.1 (Indemnity)) for the consequences of any such violation.

8.2 Option Agreement. Attached as Exhibit 8.2 is the Option Agreement dated as of the date hereof between Beam and Licensee (the "**Option Agreement**"). During the Term of this Agreement, Licensee agrees that it shall not amend the Option Agreement or enter into any other agreement that would result in a Beam Change of Control (an "**Alternative Agreement**") that would (a) diminish or otherwise adversely affect Broad's right or ability to receive at least the amount of compensation upon a Beam Change of Control contemplated in the Option Agreement as of the Effective Date, (b) modify Beam's obligation to assume or guarantee Licensee's obligations to Broad and the Broad Designees under this Agreement following a Beam Change of Control contemplated in this Agreement, or (c) modify Broad's right or ability to enforce Beam's obligation to satisfy Licensee's obligations under this Agreement following a Beam Change of Control, in each case without Broad's prior written consent.

8.3 Services Agreement. Attached as Exhibit 8.3 hereto is a Services Agreement dated as of the Effective Date hereof between Beam and Licensee (the "**Services Agreement**"). During the Term of this Agreement until a Beam Change of Control, Licensee agrees that it shall not (a) amend the Services Agreement in any manner that would limit Licensee's ability to perform its obligations under this Agreement or (b) enter into any other agreement, in each case ((a) or (b)), that would materially alter the allocation of intellectual property rights under the Services Agreement, without Broad's prior written consent, such consent not to be unreasonably withheld, conditioned or delayed.

8.4 Representations and Warranties.

8.4.1 By Broad. Broad represents and warrants that (A) Broad has the authority and right to enter into and perform its obligations under this Agreement and grant the licenses granted to Licensee herein on behalf of itself and the other Institutions, (B) as of the Effective Date, to the best of the knowledge of Broad's Office of Strategic Alliances and Partnering, the execution, delivery and performance of this Agreement by Broad does not conflict with, or constitute a breach of, any order, judgment, agreement or instrument to which it is a party or is otherwise bound, and (C) as of the Effective Date, to the best of the knowledge of Broad's Office of Strategic Alliances and Partnering, no consent of any Third Party, including without limitation any governmental authority, is required for Broad to execute, deliver and perform under this Agreement, including without limitation to grant the licenses granted to Licensee herein, except for such consents as may have been obtained prior to the Effective Date.

8.4.2 By Licensee. Licensee represents and warrants that (A) Licensee has the authority and right to enter into and perform its obligations under this Agreement, (B) as of the Effective Date, to the best of Licensee's knowledge, the execution, delivery and performance of this Agreement by Licensee does not conflict with, or constitute a breach of, any order, judgment, agreement or instrument to which it is a party or, to its knowledge, is otherwise bound, and (C) as of the Effective Date, to the best of Licensee's knowledge, no consent of any Third Party, including without limitation any governmental authority, is required for Licensee to execute, deliver and perform under this Agreement, except for such consents as may have been obtained prior to the Effective Date.

8.5 No Warranty.

8.5.1 Broad makes no representations or warranties other than those set forth above.

8.5.2 Nothing contained herein shall be deemed to be a warranty by Broad or by any other Institution that it can or will be able to obtain patents on patent applications included in the Patent Rights, or that any of the Patent Rights will afford adequate or commercially worthwhile protection.

8.5.3 NEITHER BROAD NOR ANY INSTITUTION MAKES ANY WARRANTIES WHATSOEVER AS TO THE COMMERCIAL OR SCIENTIFIC VALUE OF THE PATENT RIGHTS OR THE TRANSFERRED MATERIALS. NEITHER BROAD NOR ANY INSTITUTION MAKES ANY REPRESENTATION THAT THE PRACTICE OF THE PATENT RIGHTS OR USE OF THE TRANSFERRED MATERIALS OR THE DEVELOPMENT, MANUFACTURE, USE, SALE OR IMPORTATION OF ANY ROYALTY-BEARING PRODUCT, OR ANY ELEMENT THEREOF, WILL NOT INFRINGE ANY PATENT OR PROPRIETARY RIGHTS.

8.5.4 EXCEPT AS OTHERWISE EXPRESSLY PROVIDED IN THIS AGREEMENT, NEITHER LICENSEE NOR BROAD NOR ANY INSTITUTION MAKES ANY WARRANTY WITH RESPECT TO ANY TECHNOLOGY, PATENTS, GOODS, SERVICES, RIGHTS OR OTHER SUBJECT MATTER OF THIS AGREEMENT AND EACH OF LICENSEE, BROAD AND THE INSTITUTIONS EACH HEREBY DISCLAIM WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT WITH RESPECT TO ANY AND ALL OF THE FOREGOING.

8.6 Limitation of Liability.

8.6.1 EXCEPT WITH RESPECT TO MATTERS FOR WHICH LICENSEE IS OBLIGATED TO INDEMNIFY INDEMNITEES UNDER ARTICLE 9, AND LIABILITY RESULTING FROM A BREACH BY LICENSEE OF THE LICENSE GRANT RESTRICTIONS UNDER SECTION 2.1.2 (LICENSE GRANTS), NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY WITH RESPECT TO ANY SUBJECT MATTER OF THIS AGREEMENT UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR (A) ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES OR LOST PROFITS OR (B) COST OF PROCUREMENT OF SUBSTITUTE GOODS, TECHNOLOGY OR SERVICES.

8.6.2 Institutions' aggregate liability for all damages of any kind arising out of or relating to this Agreement or its subject matter under any contract, negligence, strict liability or other legal or equitable theory shall not exceed the amounts paid to Broad under this Agreement.

9. Indemnification and Insurance.

9.1 Indemnity.

9.1.1 Licensee shall (and shall cause its Affiliates and Sublicensees to) indemnify, defend and hold harmless each Institution and each of their current and former directors, governing board members, trustees, officers, faculty, affiliated investigators, medical and professional staff, employees, students, and agents and their respective successors, heirs and assigns (collectively, the "**Indemnitees**") from and against any claim, suit, investigation, action,

demand, judgment, liability, cost, expense, damage, deficiency, loss or obligation of any kind or nature (including reasonable attorneys' fees and other costs and expenses of litigation or defense), based upon, arising out of, or otherwise relating to this Agreement or any Sublicense or subcontract, including any cause of action relating to product liability concerning any product, process, or service made, used, sold or performed pursuant to any right or license granted under this Agreement (collectively, "**Claims**") except to the extent any such Claim results from or arises out of the gross negligence or willful misconduct of an Indemnitee or material breach of this Agreement by Broad. No Affiliate of Licensee (other than an Affiliate controlling Licensee) shall have an obligation to indemnify Broad for any Claim based upon, arising out of, or otherwise relating to the exercise of rights under this Agreement by a different Affiliate of Licensee or by any other Person unless such Affiliate or other Person is exercising rights granted by such first Affiliate or acting on such first Affiliate's behalf or upon its instruction or advice. No Sublicensee shall have an obligation to indemnify Broad for any Claim based upon, arising out of, or otherwise relating to the exercise of rights under this Agreement by a different Sublicensee, Licensee, any Affiliate of Licensee or by any other Person unless such different Sublicensee, Licensee or Affiliate or other Person is exercising rights granted by such first Sublicensee or acting on such first Sublicensee's behalf or upon its instruction or advice.

9.1.2 Procedures. For purposes of this Section 9.1.1 (Procedures), Licensee and each of its Affiliates and Sublicensees are referred to as "**Indemnitor**". The Indemnitees agree to provide Licensee with prompt written notice of any Claim for which indemnification is sought under this Agreement; provided, however, that an Indemnitee's delay in providing or failure to provide such notice shall not relieve Indemnitor of its indemnification obligations under this Agreement, except to the extent Indemnitor can demonstrate actual prejudice due to the delay or lack of notice. Indemnitor agrees, at its own expense, to provide attorneys reasonably acceptable to Broad and the applicable indemnified Institution to defend against any such Claim. The Indemnitees shall cooperate with Indemnitor, at Indemnitor's expense, in such defense and shall permit Indemnitor to conduct and control such defense and the disposition of such Claim (including without limitation all decisions relative to litigation, appeal, and settlement); provided, however, that any Indemnitee shall have the right to retain its own counsel, at the expense of Indemnitor, if representation of such Indemnitee by the counsel retained by Indemnitor would be inappropriate because of actual or potential differences in the interests of such Indemnitee and any other party represented by such counsel. Each Institution agrees to use diligent efforts to select counsel, and to cause any other Indemnitees affiliated with their respective institutions to select counsel, that minimizes the number of counsel retained by all Indemnitees if representation of an Indemnitee by the counsel retained by Indemnitor would be inappropriate because of actual or potential differences in the interests of such Indemnitee and any other party represented by such counsel. Indemnitor agrees to keep counsel(s) for Indemnitees informed of the progress in the defense and disposition of such claim and to consult with Broad and the indemnified Institution (as applicable) with regard to any proposed settlement. Licensee shall not settle any Claim that has an adverse effect on the rights of any Indemnitee hereunder that is not immaterial or that admits any liability by or imposes any obligation on any Indemnitee without the prior written consent of such Indemnitee, which consent shall not be unreasonably withheld, conditioned or delayed. An Indemnitee may not settle any Claim without the prior written consent of Licensee, which consent shall not be unreasonably withheld, conditioned or delayed.

9.1.3 Notwithstanding anything express or implied, Licensee shall not be required to indemnify, defend, or hold harmless any Indemnitee with respect to any dispute amongst any Indemnitee(s) and/or subsets of any of the foregoing, as to the division amongst themselves of the consideration paid by Licensee under this Agreement.

9.2 Insurance.

9.2.1 Beginning at the time any Royalty-Bearing Product is being commercially distributed or sold (other than for the purpose of obtaining Regulatory Approvals) by Licensee, or by an Affiliate, Sublicensee or agent of Licensee, Licensee shall, at its sole cost and expense, procure and maintain commercial general liability insurance in amounts not less than $[**] per incident and $[**] annual aggregate and naming the Indemnitees as additional insureds. During Clinical Studies of any such Royalty-Bearing Product Licensee shall, at its sole cost and expense, procure and maintain commercial general liability insurance in such equal or lesser amount as Broad or any other Institution shall require, naming the Indemnitees as additional insureds. Such commercial general liability insurance shall provide: (a) product liability coverage and (b) broad form contractual liability coverage for Licensee's indemnification obligations under this Agreement.

9.2.2 If Licensee elects to self-insure all or part of the limits described above in Section 9.2.1 (Insurance) (including deductibles or retentions that are in excess of $[**] annual aggregate) such self-insurance program must be acceptable to Broad and the other Institutions and Federal Insurance Company ((Broad's insurer) in their sole discretion. The minimum amounts of insurance coverage required shall not be construed to create a limit of Licensee's liability with respect to its indemnification obligations under this Agreement.

9.2.3 Licensee shall provide each Institution with written evidence of such insurance upon request of such Institution. Licensee shall provide each Institution with written notice at least [**] days prior to the cancellation, non-renewal or material change in such insurance. If Licensee does not obtain replacement insurance providing comparable coverage within such [**] day period, Broad shall have the right to terminate this Agreement effective at the end of such [**] day period without notice or any additional waiting periods.

9.2.4 Licensee shall maintain such commercial general liability insurance beyond the expiration or termination of this Agreement during: (a) the period that any Royalty-Bearing Product is being commercially distributed or sold by Licensee, or an Affiliate, Sublicensee or agent of Licensee; and (b) a reasonable period after the period referred to in (a) above which in no event shall be less than [**] years.

10. Term and Termination.

10.1 Term. The term of this Agreement shall commence on the Effective Date and, unless earlier terminated as provided in this Article 10, shall continue in full force and effect until the expiration of the later of: (a) the last to expire Valid Claim or (b) the end of the last Royalty Term of a Product in the Field in a country in the Territory (the "**Term**").

10.2 Termination.

10.2.1 Termination Without Cause. Licensee may terminate this Agreement upon [**] days prior written notice to Broad, with or without cause.

10.2.2 Termination for Default.

10.2.2.1 Subject to Section 3.1.2.2 (Sub-Categories of Patent Rights) and 3.5.6 (Unmet Deadline), in the event that either party commits a material breach of its obligations under this Agreement and fails to cure that breach within [**] days after receiving written notice thereof which written notice explicitly states that it is a notice of material breach under this Section 10.2.2.1 (Termination for Default), the other party may terminate this Agreement immediately upon written notice to the party in breach.

10.2.2.2 If Licensee defaults in its obligations under Section 9.2 (Insurance) to procure and maintain insurance or, if Licensee has in any event failed to comply with the notice requirements contained therein, then Broad may terminate this Agreement immediately without notice or additional waiting period.

10.2.2.3 Broad shall be entitled to, in accordance with the provisions of Section 3.1.2.2 (Sub-Categories of Patent Rights), terminate licenses granted to Licensee under Section 2.1 (License Grants) with respect to a Failed Sub-Category of Patent Rights.

10.2.2.4 Broad shall be entitled to, in accordance with the provisions of Section 3.5.6 (Unmet Deadline), (a) terminate this Agreement in its entirety under Section 3.5.6.1 (Unmet Deadline), (b) under Section 3.5.6.2 (Unmet Deadline), terminate licenses granted to Licensee under Section 2.1 (License Grants) with respect to a Licensed Product, (c) under Section 3.5.6.3 (Unmet Deadline), terminate licenses granted to Licensee under Section 2.1 (License Grants) with respect to Royalty-Bearing Products that are not either a Retained Product or a Related Product to a Retained Product, (d) under Section 3.5.6.3 (Unmet Deadline), terminate licenses granted under a Sub-Category of Patent Rights to Licensee under Section 2.1 (License Grants) except with respect to Royalty-Bearing Products that are either a Retained Product or a Related Product to a Retained Product.

10.2.3 Termination for Patent Challenge. If Licensee or any of its Affiliates or Sublicensees directly or indirectly brings, assumes or participates in, or knowingly, willfully or recklessly assists in bringing a Patent Challenge (except as required under a court order or subpoena), then the following shall apply: (a) if Licensee or any of its Affiliates is the party so bringing, assuming, participating in or assisting in such Patent Challenge, then Broad shall be entitled to immediately terminate this Agreement upon written notice to Licensee, and (b) if a Sublicensee is the party so bringing, assuming, participating in or assisting in such Patent Challenge, then (i) Broad shall be entitled to immediately terminate the rights hereunder as and to the extent sublicensed to a Sublicensee upon written notice to Licensee and (ii) Broad shall grant Licensee a period not to exceed [**] days from the date of notice by Broad to Licensee for Licensee to inform Sublicensee of its intention to terminate this Agreement due to such Sublicensee bringing, assuming, participating in or assisting in a Patent Challenge, during which period Licensee may terminate any and all agreements with such Sublicensee that contain a

Sublicense. If, pursuant to the foregoing clause (ii), Licensee terminates such sublicense agreement(s) during such [**] day period, then Broad shall not be entitled to terminate this Agreement, in whole or in part, by virtue of such Sublicensee bringing, assuming, participating in or assisting in such Patent Challenge. However, if Licensee does not terminate such agreement(s) during such [**] day period, then Broad shall be entitled to immediately terminate this Agreement in whole or in part upon written notice to Licensee thereof.

10.2.4 Bankruptcy. Broad may terminate this Agreement upon written notice to Licensee if Licensee becomes subject to a Bankruptcy Event or if Licensee becomes the subject of dissolution proceedings or otherwise discontinues all business operations to which this Agreement relates.

10.2.5 Termination without Prejudice. Broad's right of termination in this Section 10.2 (Termination) shall be in addition and without prejudice to, and shall not constitute a waiver of, any right of Broad for recovery of any monies then due to it hereunder or any other right or remedy Broad may have at law, in equity or under this Agreement.

10.3 Effect of Termination.

10.3.1 Termination of Rights. Upon expiration or termination of this Agreement, in whole or in part, by either Party pursuant to any of the provisions of Section 10.2 (Termination) or this Agreement: (a) the applicable rights and licenses granted to Licensee under Article 2 shall terminate, all rights in and to and under the applicable Patent Rights will revert to Broad and neither Licensee nor its Affiliates may make any further use or exploitation of the applicable Patent Rights; and (b) any existing agreements that contain a Sublicense of rights terminated under this Agreement shall automatically terminate to the extent of such terminated rights [**] days following the effective date of termination of this Agreement; provided, that if a Sublicensee is (i) an Affiliate of Licensee, (ii) in material default of any material provision of the applicable Sublicense such that Licensee would have the right to terminate the Sublicense or (iii) the basis for the termination of the Agreement due to such Sublicensee's actions or inactions ((i), (ii) and (iii) together, "**Ineligible Sublicensees**"), then the applicable Sublicense to which such Sublicensee is a party shall terminate effective immediately upon termination of this Agreement. Upon termination of this Agreement, in whole or in part, under any of the provisions in Section 10.2 (Termination), each Sublicensee subject to potential automatic termination under this Section 10.3.1 (Termination of Rights) that is not an Ineligible Sublicensee shall have the right to enter into a direct license from Broad (a "**Direct License**") on substantially the same non-economic terms and conditions set forth in the Sublicense and on economic terms providing for the payment by such Sublicensee to Broad of the consideration that otherwise would have been payable to Broad if the applicable Sublicense and this Agreement were still simultaneously in effect. Broad agrees to negotiate in good faith the final form of such Direct License on such financial terms and conditions; such final form of Direct License agreement shall not (i) impose any representations, warranties, obligations or liabilities on Broad or any other Institution that are not included in this Agreement, (ii) have any obligations that are greater than or inconsistent with the obligations of Broad under this Agreement or the nature of Broad as an academic and non-profit entity, and (iii) have any fewer rights than Broad has under this Agreement, as applicable to the Direct License. If any Sublicensee, other than Ineligible Sublicensees, desires to enter into such a Direct License with Broad, it shall wholly be the responsibility of

Sublicensee to notify Broad of such desire no later than [**] days after the effective date of termination of this Agreement. If Broad and the applicable Sublicensee, for any reason, do not enter into a Direct License within [**] days after the effective date of termination of this Agreement, the applicable Sublicense subject to potential automatic termination under this Section 10.3.1 (Termination of Rights), and all rights granted thereunder, shall automatically terminate.

10.3.2 Accruing Obligations. Termination or expiration of this Agreement shall not relieve the Parties of obligations accruing prior to such termination or expiration, including obligations to pay amounts accruing hereunder up to the date of termination or expiration. After the date of termination or expiration of this Agreement in its entirety (except in the case of termination by Broad pursuant to Section 10.2 (Termination)), Licensee, its Affiliates and Sublicensees may sell (a) Licensed Products then in stock and (b) Enabled Products; provided that Licensee shall pay the applicable royalties and payments to Broad in accordance with Article 4, provide reports and audit rights to Broad pursuant to Article 5 and maintain insurance in accordance with the requirements of Section 9.2 (Insurance). The Parties agree that the obligations in Section 4.1 (Equity), Section 4.8 (Success Payments), and Section 6.3 (Expenses) (with respect to patent expenses incurred by Broad prior to the Effective Date) will accrue immediately upon execution of this Agreement by both Parties, regardless of the events, invoice and payment timing details set forth therein.

10.3.3 Documentation, Right of Reference and License. Upon termination of the Agreement in its entirety, subject to the terms of any Direct Licenses and Sublicenses:

10.3.3.1 At Broad's request, the parties will discus in good faith (and subject to Licensee's other contractual commitments with Third Parties) during the [**] day period after such termination, whether and on what terms Licensee will grant Broad a sublicensable license to any patents, patent applications, data and other information controlled by Licensee or its Affiliates that improve or are otherwise related to the Patent Rights or that Cover a Licensed Product that Broad is interested in pursuing either itself or through a licensee; provided that the terms of any such license shall be consistent with Licensee's obligations under its then existing contracts and Applicable Law and its officers' and directors' fiduciary obligations.

10.3.3.2 At Broad's request, Licensee shall deliver to Broad, and Broad and its licensees shall be free to use, (a) all records required by all Regulatory Authorities to be maintained with respect to the applicable Licensed Products, all regulatory filings, approvals, reports, records, correspondence and other regulatory materials (including any related to reimbursement or pricing approvals), and all documents, data and other information related to Clinical Studies and other studies of the applicable Licensed Products and (b) any documentation and technical information that are necessary or useful for the manufacture of the applicable Licensed Products, in each case (a) and (b), if and to the extent that the provision of, access to and delivery of such documentation shall not conflict with Licensee's obligations under its then existing contracts and Applicable Law. Licensee shall retain the right to use, and grant to Affiliates and Third Parties the right to use, any records, filings, documentation or other information given to Broad under this Section 10.3.3.2 (Documentation, Right of Reference and License).

10.3.3.3 Licensee shall permit Broad and its licensees to utilize, reference, cross reference, incorporate in applications and filings, and otherwise have the benefit of all Regulatory Approvals of, or Clinical Studies or other studies conducted on, and all filings made with regulatory agencies with respect to, the applicable Licensed Products.

10.4 Survival. The Parties' respective rights, obligations and duties under Articles 5, 9, 10 and 11, and Sections 4.1 (Equity) and 4.2 (Annual License Maintenance Fees) (to the extent of payment obligations accruing prior to the effective date of expiration or termination), 4.3 (Milestone Payments) (to the extent of payment obligations accruing prior to the effective date of expiration or termination), 4.4 (Royalty on Net Sales) (to the extent of Net Sales prior to the effective date of expiration or termination), 4.5 (Patent Challenge) (to the extent applicable at the effective date of expiration or termination), 4.7 (Complex Consideration) (for so long as Licensee, its Affiliate or a Sublicensee is researching, developing or commercializing an Enabled Product(s)), Section 6.3 (Expenses) (for expenses incurred prior to the effective date of expiration or termination), Section 8.4 (Representations and Warranties) and 8.5 (No Warranty), 8.6 (Limitation of Liability) shall survive any expiration or termination of this Agreement. In addition, Licensee's obligations under Section 4.4 (Royalty on Net Sales), and 4.6 (Non-Royalty Sublicense Income) with respect to Sublicenses granted prior to the effective date of expiration or termination of the Agreement shall survive such expiration or termination. Further, any rights, obligations and duties which by their nature extend beyond the expiration or termination of this Agreement shall survive any expiration or termination of this Agreement.

11. Miscellaneous.

11.1 Confidentiality.

11.1.1 Definitions.

11.1.1.1 "**Broad Confidential Information**" means (a) any information related to Prosecution of Patent Rights provided to Licensee by or on behalf of Broad; (b) any information or material in tangible form that is marked as "confidential" or proprietary by or on behalf of Broad at the time it is sent to Licensee; (c) information that is furnished orally by or on behalf of Broad if Broad identifies such information as "confidential" or proprietary in writing by a memorandum delivered to Licensee within [**] days after the date of disclosure; and (d) the terms of this Agreement (but not its existence or its general subject matter), which shall constitute the Confidential Information of both Parties. The Parties agree the terms of this Agreement may be shared with the Institutions.

11.1.1.2 "**Licensee Confidential Information**" means (a) any Development Plan, any Current Development Demonstration, and any plan provided to Broad under Sections 2.5.7 (Intended Development or Commercialization), 2.5.8 (Proposing Party Development or Commercialization), or 2.5.9 (Third Party Development or Commercialization), (b) [**]; (c) any information or evidence provided to Broad in accordance with Sections 2.5.7 (Intended Development or Commercialization), 2.5.8 (Proposing Party Development or Commercialization), or

2.5.9 (Third Party Development or Commercialization) that is not included within the preceding clause (a); (d) any reports prepared by Licensee and provided to Broad pursuant to this Agreement (including any under Section 3.3 (Regulatory Filings) and Section 5.1.1) (Reports); (e) any copies of Sublicenses, or information extracted therefrom, provided by Licensee to Broad under Section 2.4.3 (Delivery of Sublicense Agreement); (f) any information or material in tangible form that is provided to Broad's Office of Strategic Alliances in connection with this Agreement and is marked as "confidential" or proprietary by Licensee at the time it is sent to Broad; (g) information that is furnished orally by Licensee if Licensee identifies such information as "confidential" or proprietary in writing by a memorandum delivered to Broad's Office of Strategic Alliances and Partnering within [**] days after the date of disclosure; or (h) the terms of this Agreement (but not its existence or its general subject matter), which shall constitute the Confidential Information of both Parties. Notwithstanding anything to the contrary in this Agreement, Broad may, in response to a Bona Fide Proposal, inform a Proposing Party that the [**] that is the subject of such Bona Fide Proposal is currently under research or development in a manner consistent with the Inclusive Innovation Model, without providing additional detail as to the specific manner pursuant to which such [**] is unavailable.

11.1.1.3 "**Confidential Information**" means the Broad Confidential Information and the Licensee Confidential Information, as applicable.

11.1.2 Obligations of Confidentiality. For the Term of this Agreement and a period of [**] years thereafter, (a) Licensee shall maintain in confidence and shall not disclose to any third party any Broad Confidential Information without the prior written consent of Broad, and (b) Broad shall maintain in confidence and shall not disclose to any third party any Licensee Confidential Information without the prior written consent of Licensee, provided that Broad may disclose to the Institutions (1) this Agreement including any Exhibits, and (2) such Confidential Information of Licensee as the Institutions reasonably request, provided that any disclosure under the foregoing clause (1) shall be made in confidence to the applicable Institution, and that any disclosure under the foregoing clause (2) shall be under terms of a written confidentiality agreement prohibiting the use and further disclosure by the applicable Institution(s) of such Confidential Information on terms as least as restrictive as those contained herein. Each Party shall take all reasonable steps to protect the Confidential Information of the other Party with the same degree of care used to protect its own confidential or proprietary information. Neither Party shall use the Confidential Information of the other Party for any purpose other than those contemplated by this Agreement. The foregoing obligations under this Section 11.1.2 (Obligations of Confidentiality) shall not apply to:

(i) information that is known to the receiving Party or independently developed by the receiving Party prior to the time of disclosure without use of or reference to the other Party's Confidential Information, in each case, to the extent evidenced by contemporaneous written records;

(ii) information that is independently developed by the receiving Party at or after the time of disclosure without use of or reference to the other Party's Confidential Information, to the extent evidenced by contemporaneous written records;

(iii) information disclosed to the receiving Party by a third party that has a right to make such disclosure;

(iv) information that is or becomes generally known or available to the public, other than as a result of a breach of this Agreement by the receiving Party; or

(v) information that is required to be disclosed by order of the FDA or similar authority or a court of competent jurisdiction or other government authority or agency; provided that the Parties shall use commercially reasonable efforts to obtain confidential treatment of such information by the agency, authority, or court.

11.1.3 Permitted Disclosures. Notwithstanding Section 11.1.2 (Obligations of Confidentiality), either Party may disclose Confidential Information of the other Party to the extent such disclosure is reasonably necessary in the following instances:

11.1.3.1 prosecuting or defending litigation in accordance with Article 7 of this Agreement; provided that the party making a disclosure under this Section 11.1.3.1 (Permitted Disclosures) shall seek confidential treatment, a protective order, or seek to file under seal if reasonably requested by the other party;

11.1.3.2 making filings with the Securities and Exchange Commission or foreign equivalent, any stock exchange or market, or any Regulatory Authorities, which shall include publicly disclosing or filing this Agreement as a "material agreement" in accordance with Applicable Law or applicable stock exchange regulations; provided, however, that in the case of Licensee as the disclosing party, Licensee shall provide Broad with an opportunity to review, redact and comment on any such filing and shall incorporate Broad's reasonable comments and redactions to the extent consistent with Applicable Law; provided, further, that the terms of the Inclusive Innovation Model included in this Agreement shall be disclosed in full and such terms shall not be subject to any redactions in any such filing;

11.1.3.3 complying with Applicable Law or submitting information to governmental authorities, including without limitation any Regulatory Authority, and including without limitation any order of a court or agency of competent jurisdiction, including without limitation any Regulatory Authority; provided that if either Party is required by Applicable Law to make any public disclosure of Confidential Information of the other Party, to the extent the Party so required may legally do so, it will give reasonable advance notice to the other Party of such disclosure and will use its reasonable efforts to secure confidential treatment of such Confidential Information prior to its disclosure (whether through protective orders or otherwise);

11.1.3.4 in the case of Licensee as the receiving Party, to its Affiliates and its and their prospective and actual acquirers, licensees, sublicensees, distributors, investors, lenders and underwriters, each of which prior to disclosure must be bound by written or legally enforceable professional ethical obligations of confidentiality and non-use of substantially equivalent or greater scope and duration than those set forth in this Section 11.1 (Confidentiality), and (a) its and their employees, consultants, agents, and

advisors, on a need to know basis, each of whom prior to disclosure must be bound by written obligations of confidentiality and non-use of substantially equivalent or greater scope and duration than those set forth in this Section 11.1 (Confidentiality), and (b) its and their accountants and lawyers, on a need to know basis, each of whom prior to disclosure must be bound by written or legally enforceable professional ethical obligations of confidentiality and non-use of substantially equivalent or greater scope and duration than those set forth in this Section 11.1 (Confidentiality); provided that the scope of Confidential Information that may be disclosed to any Person under this Section 11.1 (Confidentiality) is limited to the terms of this Agreement and any notices given hereunder and not any other Broad Confidential Information unless otherwise agreed to in writing by Broad; and

11.1.3.5 in the case of Broad as the receiving Party, to Broad's prospective and actual licensees (including Sublicensees in the event of termination of this Agreement) acquirers of payment or equity rights, lenders and underwriters, each of which prior to disclosure must be bound by written or legally enforceable professional ethical obligations of confidentiality and non-use of substantially equivalent or greater scope and duration than those set forth in this Section 11.1 (Confidentiality) and (a) its and their employees, consultants, agents, and advisors, on a need to know basis, each of whom prior to disclosure must be bound by written obligations of confidentiality and non-use of substantially equivalent or greater scope and duration than those set forth in this Section 11.1 (Confidentiality), and (b) its and their accountants and lawyers, on a need to know basis, each of whom prior to disclosure must be bound by written or legally enforceable professional ethical obligations of confidentiality and non-use of substantially equivalent or greater scope and duration than those set forth in this Section 11.1 (Confidentiality); provided that the disclosure to prospective or actual licensees (and the related Persons noted in the foregoing clauses (a) and (b)) is limited this Agreement and such Confidential Information of Licensee as is reasonably necessary for such prospective or actual licensee to conduct technical or legal due diligence or exercise its rights under the license granted or proposed to be granted under the Patent Rights to such actual or prospective licensee by Broad.

11.2 Additional Permitted Disclosure. In addition to the rights set forth elsewhere in this Section 11.2 (Additional Permitted Disclosure), each Institution and Licensee shall have the right to disclose (i) to Third Parties without an obligation of confidentiality all or part of a redacted copy of this Agreement, or the substance thereof, in the form filed by Licensee to comply with its obligations under the Securities Act or the Exchange Act and (ii) to Third Parties, without an obligation of confidentiality, the existence of this Agreement, the general subject matter of this Agreement, Broad's right to receive consideration under this Agreement, and all or a portion or summary of the terms of the [**] Proposed Product provisions.

11.3 Preference for United States Industry. During the period of exclusivity of this license in the United States, Licensee shall comply with 37 C.F.R. § 401.14 (i) or any successor rule or regulation.

11.4 No Security Interest. Licensee shall not enter into any agreement under which Licensee grants to or otherwise creates in any third party a security interest in this Agreement or any of the rights granted to Licensee herein. Any grant or creation of a security interest purported or attempted to be made in violation of the terms of this Section 11.4 (No Security Interest) shall be null and void and of no legal effect.

11.5 Use of Names. Except as provided below, Licensee shall not, and shall ensure that its Affiliates and Sublicensees shall not, use or register the name "The Broad Institute, Inc.," "Broad," "President and Fellows of Harvard College," the "Massachusetts Institute of Technology," "Lincoln Laboratory," or "Wyss Institute for Biologically Inspired Engineering at Harvard University," or any variation, adaptation, or abbreviation thereof (alone or as part of another name), or of any of their trustees, directors, officers, faculty, students, staff, employees, agents, or affiliated investigators or any trademark owned by any Institution, or any logos, seals, insignia or other words, names, symbols or devices that identify Broad or Institutions or any Institution's school, unit, or division ("**Institution Names**") for any purpose except with the prior written approval of, and in accordance with restrictions required by the applicable Institution. Without limiting the foregoing, Licensee shall, and shall ensure that its Affiliates and Sublicensees shall, cease all use of Institution Names on the termination or expiration of this Agreement except as otherwise approved by the applicable Institution. This restriction shall not apply to any information required by Law to be disclosed to any governmental entity.

11.6 Entire Agreement. This Agreement is the sole agreement with respect to the subject matter hereof and except as expressly set forth herein, supersedes all other agreements and understandings between the Parties with respect to the same.

11.7 Notices. Unless otherwise specifically provided, all notices required or permitted by this Agreement shall be in writing and may be delivered personally, or may be sent by e-mail, expedited delivery or certified mail, return receipt requested, to the following addresses, unless the Parties are subsequently notified of any change of address in accordance with this Section 11.7 (Notices):

If to Licensee (other than invoices) prior to October 1, 2018:	Blink Therapeutics Inc. 325 Vassar St. Suite 2A Cambridge, MA 02139 Email: [**] Attn.: CEO With required email copies to each of: [**] and Marc.Rubenstein@ropesgray.com
If to Licensee (other than invoices) as of and following October 1, 2018:	Blink Therapeutics Inc. 26 Landsdowne Street Cambridge, MA 02139 Email: [**] Attn.: CEO With required email copies to each of: [**] and [**]

If to Licensee (invoices only):	Same as above until updated by Licensee by written notice as per this Section 11.7 (Notices).
If to Broad:	The Broad Institute. Inc. 415 Main Street Cambridge, MA 02142 Email: [**] Attn.: [**]

Any notice shall be deemed to have been received as follows: (a) by personal delivery or expedited delivery, upon receipt; (b) by e-mail, upon transmission and electronic confirmation of delivery; (c) by certified mail, as evidenced by the return receipt. If notice is sent by e-mail, a confirming copy of the same shall be sent by mail to the same address.

11.8 Dispute Resolution. If any dispute between the Parties arises out of or relates to this Agreement (a "**Dispute**"), either Party by written notice to the other Party may have such issue referred for resolution to the Chief Executive Officer of Licensee, and the Chief Business Officer of Broad (collectively, the "**Executive Officers**"). The Executive Officers shall meet promptly to discuss the matter submitted and to determine a resolution. If the Executive Officers are unable to resolve the Dispute within [**] days after it is referred to them, then the Parties may pursue all other rights and remedies available to them under this Agreement, including the right to terminate this Agreement, and the matter may be brought by a Party as a Suit in a court of competent jurisdiction in accordance with Section 11.9 (Governing Law and Jurisdiction).

11.9 Governing Law and Jurisdiction. This Agreement will be governed by, and construed in accordance with, the substantive laws of the Commonwealth of Massachusetts, without giving effect to any choice or conflict of law provision, except that questions affecting the construction and effect of any patent shall be determined by the law of the country in which the patent shall have been granted. Any action, suit or other proceeding arising under or relating to this Agreement (a "**Suit**") shall be brought in a court of competent jurisdiction in the Commonwealth of Massachusetts, and the Parties hereby consent to the sole jurisdiction of the state and federal courts sitting in the Commonwealth of Massachusetts. Each party agrees not to raise any objection at any time to the laying or maintaining of the venue of any Suit in any of the specified courts, irrevocably waives any claim that Suit has been brought in any inconvenient forum and further irrevocably waives the right to object, with respect to any Suit, that such court does not have any jurisdiction over such party.

11.10 Binding Effect. This Agreement shall be binding upon and inure to the benefit of the Parties and their respective legal representatives, successors and permitted assigns.

11.11 Headings. Section and subsection headings are inserted for convenience of reference only and do not form a part of this Agreement.

11.12 Counterparts. The Parties may execute this Agreement in two or more counterparts, each of which shall be deemed an original, but both of which together shall constitute one and the same instrument. Transmission by facsimile or electronic mail of an executed counterpart of this Agreement shall be deemed to constitute due and sufficient delivery of such counterpart. If by electronic mail, the executed Agreement must be delivered in a .pdf format.

11.13 Amendment; Waiver. This Agreement may be amended, modified, superseded or canceled, and any of the terms may be waived, only by a written instrument executed by each party or, in the case of waiver, by the party waiving compliance. The delay or failure of either party at any time or times to require performance of any provisions hereof shall in no manner affect the rights at a later time to enforce the same. No waiver by either party of any condition or of the breach of any term contained in this Agreement, whether by conduct, or otherwise, in any one or more instances, shall be deemed to be, or considered as, a further or continuing waiver of any such condition or of the breach of such term or any other term of this Agreement.

11.14 No Agency or Partnership. Nothing contained in this Agreement shall give either party the right to bind the other, or be deemed to constitute either party as agent for or partner of the other or any third party.

11.15 Assignment and Successors. This Agreement may not be assigned by either Party without the consent of the other Party, which consent shall not be unreasonably withheld, provided that, Licensee may assign this Agreement and the rights, obligations and interests of Licensee hereunder without Broad's prior consent (a) to Beam in connection with a Beam Change of Control, (b) to an Affiliate of Licensee after a Beam Change of Control or (c) any purchaser of all or substantially all of its assets or all of its equity, or to any successor corporation resulting from any merger or consolidation of Licensee with or into such corporation; provided, in all cases, that (i) the assignee agrees in writing to be bound by the terms of this Agreement, (ii) the assignee is in compliance with Section 9.2 (Insurance) at the time of transfer, and (iii) a copy of such writing is provided to the Broad within [**] business days after such assignment; provided also that in the case of clause (b), Licensee remains responsible and liable for the performance of this Agreement by such Affiliate; and provided further that in the case of clause (c), if such assignee does not itself have assets in excess of [**] U.S. Dollars ($[**]) and active drug development or commercialization operations beyond those contemplated under this Agreement, then the ultimate controlling (as defined in Section 1.7 ("Affiliate")) Person agrees to guarantee the performance of this Agreement by such assignee. For clarity, such assignee's investors shall not be deemed the ultimate controlling Person in the immediately foregoing sentence. Notwithstanding anything to the contrary in this Agreement, Broad may, without the consent of Licensee, assign this Agreement and the rights, obligations and interests of Broad to (x) an Affiliate of Broad or (y) any purchaser of all or substantially all of its assets or all of its equity, or to any successor corporation resulting from any merger or consolidation of Broad with or into such corporation, provided that (1) in each case of clause (x) and (y), such assignee is also an assignee of the Patent Rights, such assignee agrees in writing to be bound by the terms of this Agreement and a copy of such writing is provided to Licensee within [**] business days after such assignment and (2) Broad may assign its right to receive payments and distributions under this Agreement without restriction. This Agreement shall be binding upon a party's permitted successors and assigns. Any assignment purported or attempted to be made in violation of the terms of this Section 11.15 (Assignment and Successors) shall be null and void and of no legal effect.

11.16 Force Majeure. Except for monetary obligations hereunder, neither party will be responsible for delays resulting from causes beyond the reasonable control of such party, including fire, explosion, flood, war, strike, or riot, provided that the nonperforming party uses commercially reasonable efforts to avoid or remove such causes of nonperformance and continues performance under this Agreement with reasonable dispatch whenever such causes are removed.

11.17 Interpretation. Each Party hereto acknowledges and agrees that: (a) it or its counsel reviewed and negotiated the terms and provisions of this Agreement and has contributed to its revision; (b) the rule of construction to the effect that any ambiguities are resolved against the drafting party shall not be employed in the interpretation of this Agreement; (c) the terms and provisions of this Agreement shall be construed fairly as to both Parties hereto and not in favor of or against either Party, regardless of which Party was generally responsible for the preparation of this Agreement; (d) the use of "include," "includes," or "including" herein shall not be limiting; (e) the word "hereof", "herein", "hereby" and derivative or similar work refers to this Agreement (including any Exhibits); (f) the words "will" and "shall" shall have the same obligatory meaning; and (g) the use of "or" shall not be exclusive.

11.18 Severability. If any provision of this Agreement is or becomes invalid or is ruled invalid by any court of competent jurisdiction or is deemed unenforceable, or interferes with the enforceability of any Patent Right, it is the intention of the Parties that the remainder of this Agreement shall not be affected.

11.19 Publicity. Notwithstanding the terms of Section 11.5 (Use of Names) above, the Parties hereby agree to issue a mutually-acceptable press release (which press release shall also be acceptable to the Institutions, to the extent of any reference to such Institution in such press release) announcing the execution of this Agreement, within [**] days following the Effective Date; provided, however, that Beam may extend such [**] day period one time for an additional [**] days upon advance written notice to Broad if Licensee has a good faith belief that premature disclosure of the existence of this Agreement would be detrimental to the business or affairs of Beam or Licensee in light of then ongoing negotiations with a third party(ies) regarding a license(s) or strategic transaction(s), and the Parties may extend such period by additional [**]-day increments by mutual written consent. Licensee shall provide Broad with a written summary of the basis for such belief with any such notice. Each Party agrees that it will not issue a press release or other public statement relating to this Agreement or the relationship of the Parties without obtaining the prior written approval of the other Party. Permission shall not be required to repeat information that has already been publicly released or to disclose information that a Party is permitted to disclose under Section 11.1 (Confidentiality). Notwithstanding any other provision of this Agreement, the Parties agree that the Institutions may make the Inclusive Innovation Model highly visible as a new and transformative open innovation model, including by disclosing such model publicly or to Third Parties.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their duly authorized representatives as of the date first written above.

The Broad Institute, Inc.

By: /s/ Issi Rozen
Name: Issi Rozen
Title: Chief Business Officer

Blink Therapeutics Inc.

By: /s/ John Evans
Name: John Evans
Title: CEO

Exhibit 1.42

Competitors

1) [**]
2) [**]
3) [**]
4) [**]
5) [**]
6) [**]
7) [**]
8) [**]

Exhibit 1.66

[**]

87

Exhibit 1.117

Patent Rights

88

Exhibit 3.1.1

[**]

89

Exhibit 3.2.1

Development Plan

90

Exhibit 3.2.1-1

[**]

Exhibit 4.1

Form of Subscription Agreement

SUBSCRIPTION AGREEMENT

This Subscription Agreement (the "Agreement") is made and entered into as of [_____], 2018, by and between Blink Therapeutics Inc., a Delaware corporation (the "Company") and the Broad Institute Inc., a Massachusetts non-profit corporation (the "Purchaser").

WHEREAS, on the terms and subject to the conditions set forth herein, the Purchaser desires to subscribe for and purchase, and the Company proposes to sell to the Purchaser, [_____] shares (the "Shares") of the Company's Common Stock, par value $0.01 per share (the "Common Stock"), as partial payment for the licenses and other rights granted to the Company by the Purchaser, pursuant to Section [_] of that certain License Agreement, by and between the Company and the Purchaser, dated as of [_____], 2018 (the "License Agreement").

NOW, THEREFORE, in consideration of the foregoing and of the mutual covenants and obligations hereinafter set forth and of other good and valuable consideration, the adequacy and receipt of which are hereby acknowledged, the parties hereto, intending to be legally bound, hereby agree as follows:

1. **Purchase And Sale Of Shares**.

1.1. Purchase and Sale of Shares. Subject to the terms and conditions set forth herein, upon the execution hereof, the Company shall sell to the Purchaser, and the Purchaser shall purchase from the Company, the Shares as consideration for the licenses and other rights granted to the Company by the Purchaser pursuant to the License Agreement.

1.2. Delivery of Certificates Representing Purchased Shares. The Company shall deliver to the Purchaser a certificate in the name of the Purchaser representing the Shares purchased by the Purchaser.

1.3. Delivery of Joinder Agreements. The Purchaser shall deliver to the Company a joinder signature page to that certain Voting Agreement, by and among the Company and the parties set forth therein, dated on or about the date hereof, in substantially the form attached hereto as Exhibit A-1, and that certain Right of First Refusal and Co-Sale Agreement, by and among the Company and the parties set forth therein, dated on or about the date hereof, in substantially the form attached hereto as Exhibit A-2.

2. **Representations and Warranties of the Purchaser**. The Purchaser hereby represents and warrants as of the date hereof to the Company as follows:

2.1. Investment Representation. Such Purchaser is an "accredited investor" under Regulation D of the Securities Act. Such Purchaser is aware that the Shares have not been registered under the Securities Act, or qualified under any state securities laws. The Shares are being acquired for investment purposes only and not for sale or with a view to distribution of all or any part thereof in violation of the securities laws.

2.2. Access to Information. Such Purchaser has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of its purchase of the Shares and regarding the business, financial affairs and other aspects of the Company, and it has further had the opportunity to obtain any information (to the extent the Company possesses or can acquire such information without unreasonable effort or expense) which it deems necessary to evaluate its investment or to verify the accuracy of information otherwise provided to it.

2.3. Restricted Securities. Such Purchaser understands that the Shares will be characterized as "restricted securities" under the Securities Act and that under such laws and applicable regulations, the Shares may be resold without registration under the Securities Act only in certain limited circumstances, and that otherwise the Shares must be held indefinitely. Such Purchaser further represents that it is familiar with Rule 144 promulgated under the Securities Act, as presently in effect, and the conditions which must be met in order for Rule 144 to be available for resale of "restricted securities," and understands the resale limitations imposed by the Securities Act.

2.4. Authority. Such Purchaser has authority to execute and deliver this Agreement and to perform its obligations hereunder. This Agreement has been duly and validly executed and delivered by such Purchaser and (assuming the due authorization, execution and delivery by the Company) constitutes the legal, valid and binding obligation of the Purchaser, enforceable against the Purchaser in accordance with its terms.

2.5. Organization. Such Purchaser is duly organized, validly existing and in good standing under the laws of the jurisdiction of its formation.

3. **Representations and Warranties of the Company**. The Company represents and warrants as of the date hereof to the Purchaser as follows:

3.1. Authorization. The Company has all requisite corporate power and authority to execute and deliver this Agreement, sell the Shares and otherwise perform its obligations hereunder. The execution, delivery and performance of this Agreement and the consummation by the Company of the transactions contemplated hereby have been duly and validly authorized by all necessary corporate action. This Agreement has been duly and validly executed and delivered by the Company and (assuming the due authorization, execution and delivery by the Purchaser) this Agreement constitutes the legal, valid and binding obligation of the Company, enforceable against it in accordance with its terms.

3.2. Organization. The Company is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware.

3.3. Capitalization. The authorized capital stock of the Company immediately prior to consummation of the transactions contemplated by this Agreement consists solely of [_____] shares of Common Stock, of which [_____] shares are issued and outstanding, and [_____] shares of Preferred Stock of which [_____] shares are issued and outstanding. The Company has not adopted an equity incentive plan for issuance to officers,

directors, employees and consultants of the Company. Other than as described above, immediately prior to consummation of the transactions contemplated by this Agreement, there are no outstanding shares of capital stock, convertible securities, outstanding warrants, options or other rights to subscribe for, purchase or acquire from Licensee any capital stock of Licensee and there are no contracts or binding commitments providing for the issuance of, or the granting of rights to acquire, any capital stock of Licensee or under which Licensee is, or may become, obligated to issue any of its securities.

3.4. Valid Issuance. All currently issued and outstanding shares of Company capital stock are duly authorized, validly issued, fully paid, non-assessable and free of all preemptive rights. The Shares, when issued to the Purchaser under this Agreement, will be duly authorized, validly issued, fully paid, non-assessable and free of all preemptive rights. All currently issued and outstanding shares of Company capital stock and all shares when issued to the Purchaser under this Agreement were or will be, issued in accordance with all Applicable Law.

4. **Preemptive Rights**.

4.1. Subject to the terms and conditions of this Section 4 (Preemptive Rights) and applicable securities laws, if the Company proposes to offer or sell any New Securities after the Financing Threshold (as defined in the License Agreement) has been achieved, the Purchaser shall have the right to purchase from the Company that portion of such New Securities as equals the proportion that the Common Stock then held by the Purchaser (including all shares of Common Stock then issuable upon conversion or exercise, as applicable, of Preferred Stock and any other equity securities then held by the Purchaser) bears to the total Common Stock of Licensee then outstanding on a Fully-Diluted Basis (as defined in the License Agreement). Following notice by the Company to the Purchaser, stating (i) its bona fide intention to offer such New Securities, (ii) the number of such New Securities to be offered in aggregate and the corresponding number the Purchaser has the right to purchase, and (iii) the price and terms, if any, upon which it proposes to offer such New Securities, the Purchaser may elect to purchase or otherwise acquire, at the price and on the terms specified in the notice, up to that portion of such New Securities eligible for purchase by the Purchaser by notification to the Company within twenty (20) days after the offer notice is given. The Company must give notice to the Purchaser at least twenty-five (25) days in advance of the issuance of New Securities.

4.2. “New Securities” shall mean, collectively, equity securities of the Company, whether or not currently authorized, but shall not include (a) Exempted Issuances (as defined in the License Agreement), (b) shares of common stock issued or issuable, and options, warrants or other rights to purchase Common Stock issued or issuable to Licensee’s employees, consultants, officers, directors, or advisors as part of an incentive compensation arrangement or to Licensee’s former employees, consultants, officers, directors, or advisors as part of a settlement of any dispute regarding incentive compensation arrangements, (c) shares of Common Stock issued or issuable to banks, equipment lessors, real property lessors, financial institutions or other Persons engaged in the business of making loans pursuant to a debt financing, commercial leasing or real property leasing transaction, or (d) shares of Common Stock issued or issuable in connection with any settlement of any action, suit, proceeding or litigation.

4.3. The Purchaser may not assign the rights set forth pursuant to this Section 4 (Preemptive Rights) without the consent of the Company to any third party other than a holder of the Preferred Stock of the Company; provided, however, that the Purchaser may assign the foregoing right without the consent of the Company to (x) any third party other than a holder of the preferred stock of Licensee provided that in each such case, the Purchaser notifies the Company in writing in connection with the transfer of such rights or to [___] or [____].

4.4. The preemptive rights in this Section 4 (Preemptive Rights) shall not be applicable to (i) Exempted Securities (as defined in the Company's Certificate of Incorporation, as it may be amended or restated from time to time); or (ii) shares of Common Stock issued in a public offering.

4.5. The covenants set forth in this Section 4 (Preemptive Rights) shall terminate and be of no further force or effect upon the earliest to occur of (i) immediately before the consummation of the Company's first underwritten public offering of securities, or (ii) when the Company (or its ultimate parent company) first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, (iii) upon a Deemed Liquidation Event (as defined in the Company's Certificate of Incorporation, as it may be amended or restated from time to time), or (iv) upon the termination of the License Agreement.

5. **Miscellaneous**.

5.1. Governing Law. This Agreement and all matters arising hereunder shall be governed by and construed under the laws of the State of Delaware, without regard to its conflicts of law rules or provisions.

5.2. Severability. If any provision of this Agreement or the application of such provision to any Person or circumstance shall be held by a court of competent jurisdiction to be invalid, illegal, or unenforceable under the Applicable Laws of any jurisdiction, (i) the remainder of this Agreement or the application of such provisions to other Persons or circumstances or in other jurisdictions shall not be affected thereby, (ii) such invalid, illegal, or unenforceable provision shall be deemed inoperative to the extent that it may conflict therewith and shall be deemed modified to conform with such law, and (iii) such invalid, illegal, or unenforceable provision shall not affect the validity or enforceability of any other provision of this Agreement.

5.3. Counterparts. This Agreement may be executed in one or more counterparts, each of which when so executed and delivered shall be deemed an original, and all of which when taken together shall constitute one and the same instrument. The execution of this Agreement may be by actual or facsimile signature.

5.4. Entire Agreement; Survival. This Agreement constitutes the entire agreement of the parties hereto in respect of the subject matter hereof and thereof, and supersedes any and all prior agreements or understandings between the parties hereto in respect of such subject matter. Either party's failure to enforce any provision or provisions of this Agreement shall not in any way be construed as a waiver of any such provision or provisions, nor prevent that party thereafter from enforcing each and every other provision of this Agreement. The rights granted both parties herein are cumulative and shall not constitute a waiver of either party's right to assert all other legal remedies available to it under the circumstances. The representations and warranties of the parties contained in this Agreement shall survive the execution and delivery of this Agreement and the consummation of the transactions contemplated by this Agreement.

[**Reminder of Page Intentionally left Blank**]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed, all as of the date first written above.

BLINK THERAPEUTICS INC.

By: _____
Name:
Title:

THE BROAD INSTITUTE, INC.

By: _____
Name:
Title:

Exhibit 4.4.7

Arbitration

1. If Broad and Licensee do not agree within [**] days upon (a) the allocation based on the relative contribution of value of the Royalty-Bearing Product and the Other Active Component(s) in a combination product as provided in Section 4.4.7 (Combination Products), or (b) whether or not Licensee has been engaged in active negotiations under Section 2.5.5.2 (Proposed Product Development Period), then either party may refer such disagreement (a "**Dispute**") for resolution by arbitration in accordance with the terms of this Exhibit 4.4.7.

2. If a party desires to pursue resolution of the Dispute, then the Dispute shall be submitted by either party for resolution in arbitration pursuant to the then current *CPR Non-Administered Arbitration Rides* ("***CPR Rules***") (www.cpradr.org), except where they conflict with the provisions of this Exhibit 4.4.7, in which case these provisions control. The arbitration will be held in Boston, Massachusetts. All aspects of the arbitration shall be treated as confidential.

3. The arbitrators will be chosen from the CPR Panel of Distinguished Neutrals, unless a candidate not on such panel is approved by both Parties in writing. Each arbitrator shall be an attorney (active or retired) admitted to practice in a state of the United States with at least [**] ([**]) years' experience with a law firm or corporate law department of over [**] ([**]) lawyers, with a preference for substantial experience in negotiating or litigating complex transactions in the biopharmaceutical industry.

4. The arbitration tribunal shall consist of a single arbitrator (having the qualifications referred to in Paragraph 3 above) if the Parties in their discretions agree, chosen in accordance with the CPR Rules. If the Parties are unable to so agree, then the arbitration tribunal shall consist of three (3) arbitrators (each having the qualifications referred to in Paragraph 3 above), of whom each party shall designate one in accordance with the "screened" appointment procedure provided in CPR Rule 5.4. The chair will be chosen in accordance with CPR Rule 6.4. Candidates for the arbitrator position(s) may be interviewed by representatives of the Parties in advance of their selection, *provided* that both Parties are represented.

5. The Parties agree to select the arbitrator(s) within [**] days after initiation of the arbitration. The hearing will be concluded within [**] days after selection of the arbitrator(s), and the determination (as provided in Paragraph 8 below) will be rendered within [**] days after the conclusion of the hearing, or of any post-hearing briefing, which briefing will be completed by both sides within [**] days after the conclusion of the hearing. In the event the Parties cannot agree upon a schedule, then the arbitrator(s) shall set the schedule following the time limits set forth above as closely as practical.

6. The hearing will be concluded in [**] hearing days or less. Multiple hearing days will be scheduled consecutively to the greatest extent possible. A transcript of the hearing shall be made and shall be made available to the arbitrator(s) and each party.

7. The arbitrator(s) shall be guided, but not bound, by the then current *CPR Protocol on Disclosure of Documents and Presentation of Witnesses in Commercial Arbitration* (www.cpradr.org) ("***Protocol***"). The Parties will attempt to agree on modes of document disclosure, electronic discovery, witness presentation, etc. within the parameters of the Protocol. If the Parties cannot agree on discovery and presentation issues, the arbitrator(s) shall decide on presentation modes and provide for discovery guided by the Protocol, understanding that the Parties contemplate reasonable discovery.

8. If the Dispute is a dispute under Section 1(a) of this Exhibit 4.4.7, the arbitrator(s) shall determine the fraction, C/C+D, by which total Net Sales of a combination product that is the subject of the Dispute shall be multiplied (as contemplated under Section 4.4.7 (Combination Products)) in a country during the applicable royalty reporting period prior to calculation of the royalty to Broad, where C is [**] and D is [**].

9. If the Dispute is a dispute under Section 1(b) of this Exhibit 3.3.7, the arbitrator(s) shall determine whether, and for how long, Licensee has been engaged in active negotiations with the Proposing Party under Section 2.5.5.2 (Proposed Product Development Period).

10. The arbitrator(s) shall decide the merits of any Dispute in accordance with the laws of the Commonwealth of Massachusetts, without application of any principle of conflict of laws that would result in reference to a different law. The arbitrator(s) may not apply principles such as "*amiable compositeur*" or "*natural justice and equity*."

11. The arbitrator(s) are expressly empowered to decide dispositive motions in advance of any hearing and shall endeavor to decide such motions as would a United States District Court Judge located in the District of Massachusetts. A determination shall be entered if a dispositive motion is granted that fully resolves the Dispute.

12. The arbitrator(s) shall render a written opinion stating the reasons upon which the determination is based. The Parties irrevocably consent to the jurisdiction of any and all state and federal courts sitting in the Commonwealth of Massachusetts for the enforcement of the provisions of this Exhibit 4.4.7. Any other court with jurisdiction may act in the same fashion.

13. Rule 14 of the CPR Rules does not apply to this Agreement. The Parties shall share equally the cost of the arbitration by the arbitrator(s), and each party shall bear its own costs and attorneys' fees associated with the arbitration.

Exhibit 4.8

Success Payments

1. **Definitions**. Capitalized terms used in this Exhibit that are not otherwise defined in the Agreement to which this Exhibit is attached shall have the following meanings:

1.1. **"Affiliate"** means, with respect to a Person, organization or entity, any Person, organization or entity controlling, controlled by or under common control with, such Person, organization or entity. For purposes of this definition only, "control" of another Person, organization or entity will mean the possession, directly or indirectly, of the power to direct or cause the direction of the activities, management or policies of such Person, organization or entity, whether through the ownership of voting securities, by contract or otherwise. Without limiting the foregoing, control will be presumed to exist when a Person, organization or entity (a) owns or directly controls fifty percent (50%) or more of the outstanding voting stock or other ownership interest of the other organization or entity or (b) possesses, directly or indirectly, the power to elect or appoint fifty percent (50%) or more of the members of the governing body of the other organization or entity. The parties acknowledge that in the case of certain entities organized under the laws of certain countries outside of the United States, the maximum percentage ownership permitted by law for a foreign investor may be less than fifty percent (50%), and that in such cases such lower percentage will be substituted in the preceding sentence.

1.2. **"Fair Market Value"** [**].

1.3. **"Multiple of Initial Equity"** [**].

1.4. **"Series A Preferred Stock"** means shall mean Licensee's Series A Preferred Stock, par value $0.0001 per share, and any securities received upon conversion thereof or in exchange therefor. [**].

1.5. **"Success Payment Amount"** means the positive difference, if any between (A) the amount ([**]) set forth in the table in Section 2 (Success Payments) of this Exhibit 4.7 set forth opposite the greatest Trigger Value that the Multiple of Initial Equity as of the [**] meets or exceeds, less (B) all payments that had previously been paid or become payable to Broad in accordance with Section 2 (Success Payments) on a prior [**].

1.6. **"Success Payment Date"** means (i) with respect to any Success Payment arising as a result of an [**], each such [**] (plus a grace period of up to [**] days at Licensee's option if Licensee is evaluating in good faith whether to undertake a capital market transaction during the grace period such as a follow-on offering, provided that no grace period shall be available to Licensee as a result of a secondary offering with no primary offering component and Licensee shall not request such grace period more than [**] times during the [**]), (ii) with respect to any Success Payment arising as a result of a [**], the earlier of (a) the date on which any proceeds from the Licensee Sale are paid or distributed to any stockholder of Licensee and (b) the date that is [**] days after the [**], and (iii) with respect to any other Success Payment, the date that is the [**] pursuant to which such Success Payment obligation arises.

1.7. **[**]

1.8. **"Success Payment Value"** means, with respect to each share of [**] and as of any [**], the aggregate of (i) all dividends and other distributions (including the fair market value of non-cash distributions) made to the holders of [**] with respect to each such share on or before the [**] and (ii) the [**] of each such share of [**] (excluding any dividends and other distributions included under the foregoing clause (i)) as of such [**].

1.9. **[**]

2. **Success Payments**.

2.1. [**]. If the Multiple of Initial Equity as determined with respect to such [**] is equal to or exceeds any of the values of the Multiple of Initial Equity set forth in the table below (the **"Trigger Values"**), Licensee shall notify Broad, or its designee, within [**] calendar days of such [**] and pay to Broad or its designee an aggregate payment equal to the Success Payment Amount. Such Success Payment Amount shall payable within [**] days of the Success Payment Date with respect to such Success Payment Amount, in cash or, in the Licensee's sole discretion and subject to Section 2.2 (Registration Rights) of this Exhibit 4.7, in publicly tradable shares of the Licensee's common stock ("**Success Shares**"), or any combination thereof. For clarity, no more than One Hundred Five Million Dollars ($105,000,000) shall be owed by Licensee in the aggregate under this Section 2 (Success Payments).

[**]	Success Payment (U.S. Dollars)
[**]	Five Million Dollars ($5,000,000)
[**]	[**]
[**]	[**]
[**]	[**]
[**]	One Hundred Five Million Dollars ($105,000,000)

Notwithstanding any termination of the [**], Licensee's obligation to pay the Success Payment Amount already earned and accrued with respect to a transaction (taking account of all payments received under such transaction, including post-closing payments) at the time of the termination of the [**], shall survive such termination of the [**] until such payment has actually been made in full. Furthermore, notwithstanding any termination of the [**] or any other provision to the contrary herein, any post-closing payments will be aggregated with all prior payments made at the closing of the applicable transaction for purposes of determining the Success Payment Value and any Success Payment Amount due, with the Success Payment Value and the Success Payment Amount being recalculated as post-closing payments are received, and giving such post-closing payment the same weight in the calculation of the Success Payment Amount as payments that had already been received pursuant to the transaction as of its [**].

For purposes of this Section 2 (Success Payments) of this Exhibit 4.7 (and the other provisions of this Section 2 (Success Payments) to the extent necessary for the application or interpretation of the terms of this Section 2 (Success Payments)), the term **"Licensee"** shall include the term **"Acquirer";** provided that, notwithstanding anything in this Exhibit 4.7 to the contrary, in the event of a consummation of a Beam Change of Control transaction, (a) the term "Series A Preferred Stock" shall be replaced by the term "Beam Series A Preferred Stock", (b) the term "Series B Preferred Stock" shall be replaced by the term "Beam Series B Preferred Stock" and (c) the term "Series A Investors" shall be replaced by "Beam Series A Investors".

2.2. Registration Rights.

2.2.1. Prior to the issuance of any Success Shares, Licensee shall file a registration statement on Form S-1 or Form S-3 filed by Licensee with the Securities and Exchange Commission under the Securities Act (a "**Resale Registration Statement**") to permit the resale by Broad or its designee of all of such Success Shares. Such Resale Registration Statement shall have been declared effective by the Securities and Exchange Commission on or before the date of issuance of any Success Shares. All expenses related to the registration, qualification or compliance with registration of the Success Shares shall be borne by Licensee.

2.2.2. Any Resale Registration Statement shall include a "final" prospectus, including the information required by Item 507 of Regulation S-K of the Securities Act, as provided by the holders of the Success Shares covered by such Resale Registration Statement. Notwithstanding the foregoing, before filing the Resale Registration Statement, Licensee shall furnish to Broad a copy of the Resale Registration Statement and afford Broad a reasonable opportunity to review and comment on the Resale Registration Statement. Broad shall furnish to Licensee such information regarding itself and its designees as Licensee may reasonably request and as shall be reasonably required in connection with any Resale Registration Statement referred to in this Agreement. Broad agrees to, as promptly (and in any event prior to any sales made pursuant to a prospectus), furnish to Licensee all information required to be disclosed in order to make the information previously furnished to Licensee by Broad not misleading.

2.2.3. If the Resale Registration Statement has not been declared effective on or before the date the shares are issued and the per share price of the Success Shares declines between such date of issuance and the date such Resale Registration Statement is declared effective, then Licensee shall pay to Broad promptly following such effectiveness date, an amount equal to the product of the number of Success Shares issued to Broad multiplied by the difference between the per share closing price of the Success Shares on date of issuance minus the closing per share price of the Success Shares on the effectiveness date. Licensee and Broad agree that the payment described in this Section 2.2.3 shall be the sole and exclusive remedy with respect to any breach of the second sentence of Section 2.2.1.

3. **Fair Market Value**. The Fair Market Value with respect to each share of [**] as of any [**] shall be determined as follows:

3.1. With respect to any Success Payment arising as a result of the [**], the **"Fair Market Value"** will be the volume weighted average of the closing trading prices of a share of the common stock of Licensee over the consecutive [**] period ending on the applicable [**] as calculated using the VWAP function on a Bloomberg Terminal.

3.2. With respect to any [**] in which the sole consideration received for each share of Series A Preferred Stock is cash, the **"Fair Market Value"** will be the cash received for each share of Series A Preferred Stock.

3.3. With respect to any [**] in which the sole consideration received for each share of Series A Preferred Stock is common stock traded on a national securities exchange, the "**Fair Market Value**" with the price per share of each such share of common stock multiplied by the number of shares of such stock for each share of Series A Preferred Stock.

3.4. With respect to any [**] in which the consideration received for each share of Series A Preferred Stock is other than solely cash, or securities traded on a national exchange, then the **"Fair Market Value"** shall be the cash, marketable securities, or other property received for each share of the Licensee's Series A Preferred Stock in such transaction, determined as set forth below and in accordance with the Fair Market Value Methodology (as defined in Section 4.5 (Notice of and Objection to Fair Market Value) of this Exhibit 4.7).

4. **Notice of and Objection to Fair Market Value**.

4.1. Within [**] calendar days of the [**], Licensee shall deliver to Broad a proposed Fair Market Value by written notice (the **"Licensee Notice"**), which notice shall include a description of the method used to calculate, and the details of the calculation of, such Fair Market Value. If Broad does not object to such written notice by delivering written notice to Licensee of Broad's objection within [**] calendar days (an **"Objection Notice"**), the Fair Market Value shall be the Fair Market Value proposed in such Licensee Notice. Within [**] calendar days of the delivery of such Objection Notice (the end of such [**] calendar day period being the **"Trigger Date"**), each of Broad and Licensee shall consult with each other and attempt in good faith to agree upon a Fair Market Value with the Fair Market Value being the price so agreed in writing if agreement is reached within such time period.

4.2. If Broad and Licensee fail to mutually agree on a Fair Market Value by the Trigger Date, then a Person(s) selected in accordance with the provisions of Section 4.4 (Notice of and Objection to Fair Market Value) of this Exhibit 4.7, to act as an expert and not as an arbitrator (the **"Valuation Expert"**), at the expense of each of Broad and Licensee in equal proportions, for the purpose of making the determination referred to here, with such Valuation Expert instructed to determine its independent estimate of the Fair Market Value (the **"Valuation Expert's Estimate"**) in accordance with the Fair Market Value Methodology within [**] calendar days after being appointed (it being understood that neither Party shall provide the Valuation Expert with its respective Fair Market Value Notices nor disclose to such Valuation Expert the contents thereof and that the Parties shall make available to such Valuation Expert access on a confidential basis to such books, accounts, records and forecasts as reasonably requested and believed to be necessary to determine the Fair Market Value).

4.3. The Fair Market Value shall then conclusively be deemed to equal the Valuation Expert's Estimate, and such value shall be final and binding on the Parties hereto (it being understood that for the avoidance of doubt no Party shall be able to contest the Valuation Expert's Estimate based on any claim of non-adherence to the Fair Market Value Methodology).

4.4. If Licensee and Broad fail to mutually agree on a Valuation Expert within [**] calendar days of the Trigger Date, each of Licensee and Broad shall, within [**] calendar days thereafter, appoint two independent public accountants (that shall each not be an Affiliate or service provider of any of Licensee or its Affiliates or Broad at the time of arbitration), who shall try to mutually agree on a third party Valuation Expert. If such independent public accountants fail to mutually agree on such Valuation Expert within [**] calendar days from appointment, each of such independent public accountants shall appoint two additional independent public accountants within [**] calendar days, and the Valuation Expert will be selected from among the four (4) independent public accountants by drawing lots. The Success Payment Date will be extended by up to [**] calendar days if necessary to complete the process of designation of the Valuation Expert.

4.5. All Fair Market Value determinations set forth in any Fair Market Value Notice pursuant to this Exhibit 4.7 and all valuations estimated or determined by the Valuation Expert must adhere to the following requirements (the **"Fair Market Value Methodology"**):

4.5.1. subject to the below, be in accordance with industry standard valuation methodologies including but not limited to revenues, price-earnings ratio, free cash flow, EBITDA multiples or other appropriate metrics;

4.5.2. be, subject to Section 4.5.3 (Notice of and Objection to Fair Market Value) of this Exhibit 4.7, based on the actual historical results of the operations of Licensee as reflected on its audited and unaudited financial statements and reasonable forecasts of up to [**] years assuming ordinary course of operations of Licensee consistent with past practice unless Licensee's results of operations show a loss for any portion of such period; and

4.5.3. for the avoidance of doubt, specifically, take into full account the working capital balances of Licensee and assume that any financial indebtedness or negative working capital balances of Licensee are paid off or offset in full with available cash (with the consequences or repayment or failure to offset with available cash transferred reflected as a degradation to the Fair Market Value).

Exhibit 8.2

Option Agreement

Exhibit 8.3

Services Agreement

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Exhibit 10.6

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [**], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO BEAM THERAPEUTICS INC. IF PUBLICLY DISCLOSED.

LICENSE AGREEMENT

by and between

EDITAS MEDICINE, INC.

and

BEAM THERAPEUTICS INC.

May 9, 2018

LICENSE AGREEMENT

This License Agreement (this "Agreement"), effective as of May 9, 2018 (the "Effective Date"), is made by and between Editas Medicine, Inc., a Delaware corporation ("Editas"), and Beam Therapeutics Inc., a Delaware corporation ("Beam") (each, a "Party" and collectively, the "Parties").

WHEREAS, Editas is a biotechnology company focused on the application of its industry-leading genome editing technology to the discovery and development of gene editing therapies for the treatment of a broad range of diseases and conditions;

WHEREAS, Beam is a biotechnology company focused on developing precision genetic medicines through base editing;

WHEREAS, Beam wishes to obtain license rights from Editas with respect to certain Editas-controlled Patents and an option to obtain license rights from Editas with respect to other Editas-controlled Patents, each as more particularly set forth herein.

NOW, THEREFORE, in consideration of the premises and mutual covenants herein contained, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto agree as follows:

ARTICLE 1
DEFINITIONS AND INTERPRETATION

1.1 Definitions. Unless the context otherwise requires, the terms in this Agreement, when used with initial capital letters, shall have the meanings set forth below unless otherwise expressly specified in this Agreement:

"2014 MGH Agreement" means the Exclusive Patent License Agreement [**] by and between The General Hospital Corporation, d/b/a Massachusetts General Hospital ("MGH") and Editas, dated as of August 29, 2014, as amended by the First Amendment, dated as of June 29, 2015 and the Second Amendment, dated as of November 17, 2016, as may be further amended by such parties from time to time.

"2016 MGH Agreement" means the Exclusive Patent License Agreement [**] by and between MGH and Editas, dated as of August 2, 2016, as may be amended by such parties from time to time.

"[**] License" shall have the meaning set forth in **Section 2.5.3**.

"[**] Patents" shall have the meaning set forth in **Section 2.5.3**.

"Additional Licensor" shall have the meaning set forth in **Section 2.5.3**.

"Affiliate" means, with respect to a Party, any person, corporation, firm, joint venture or other entity which, directly or indirectly through one or more intermediaries, controls, is controlled by or is under common control with such Party. As used in this definition, "control" means the possession of the majority of the ownership, or the power to direct or cause the direction of the management and policies, of an entity, whether through the ownership of the outstanding voting securities thereof, by contract or otherwise.

[**]

[**]

[**]

"Alliance Coordinator" shall have the meaning set forth in **Section 3.1**.

"Allocation Schedule" means Exhibit A.

"Annual Maintenance Fees" means, with respect to an Institutional In-License, any annual license, maintenance, minimum royalty or similar fees payable by Editas to the applicable Institution under the terms of such Institutional In-License for the maintenance of Editas's rights thereunder.

"Annual Patent Costs" shall have the meaning set forth in **Section 4.6.2**.

"Arbitration Request" shall have the meaning set forth in **Section 10.3**.

"Bankruptcy Laws" shall have the meaning set forth in **Section 2.8**.

"Base Editing Therapy" means a therapeutic product that utilizes a Base Editor to achieve conversion of the applicable nucleobase.

"Base Editing" means [**].

"Base Editing Window" means a region within [**] nucleotides of a specific polynucleotide sequence bound by the nucleic acid binding protein.

"Base Editor" means [**].

"Beam Common Stock" means shares of common stock, $0.01 par value per share, issued by Beam.

"Beam Indemnitee" shall have the meaning set forth in **Section 8.2**.

"Beam Patents" means Patents owned or controlled by Beam.

"Beam Preferred Stock" means shares of the same class and series of capital stock issued by Beam to bona fide investors in its most recent convertible preferred stock financing in which Beam raised at least $[**] through the sale and issuance of such stock.

"Beam Series A Shares" shall have the meaning set forth in **Section 4.2**.

"Breaching Party" shall have the meaning set forth in **Section 9.3**.

"Broad" means the Broad Institute, Inc.

"Cas9-I Agreement" means the Amended and Restated Cas9-I License Agreement entered into by and among Harvard, Broad and Editas, dated as of December 16, 2016, as amended on March 3, 2017, as may be further amended by such parties from time to time.

"Cas9-II Agreement" means the Cas9-II License Agreement by and between Broad and Editas, dated as of December 16, 2016, as may be amended by such parties from time to time.

"Claims" shall have the meaning set forth in **Section 8.1.1**.

"Commercialization" and "Commercialize" means all activities undertaken relating to the marketing, promotion (including advertising, detailing, sponsored product or continuing medical education), any other offering for sale, distribution, and sale of a product.

"Commercially Reasonable Efforts" means (a) with respect to the efforts to be expended by a Party with respect to an agreed objective, except as otherwise provided in clause (b), such reasonable, diligent and good faith efforts as such Party would normally use to accomplish a similar objective under similar circumstances taking into account the reasonable allocation of such Party's resources under the circumstances, and [**].

"Competitive Product" means, with respect to a Licensed Product, a Third Party Base Editing Therapy that is directed to the same target or indication to which such Licensed Product is directed.

"Confidential Information" shall have the meaning set forth in **Section 6.1**.

"Control" means with respect to any product, Patent or other tangible or intangible intellectual property right, the possession (whether by ownership or license, other than licenses granted pursuant to this Agreement) by a Party or its Affiliate of the ability to grant to the other Party access to, ownership of, or a license or sublicense under, such product, Patent, or other intellectual property without violating the terms of any agreement or other arrangement with any Third Party.

"Cover," "Covering," "Covered," or "Covers" means, as to any subject matter and a Patent, that, in the absence of a license granted under, or ownership of, such Patent, the making, using, selling, offering for sale or importation of such subject matter would infringe such Patent or, as to a pending Patent, the making, using, selling, offering for sale, importation or other practice of such subject matter would infringe such Patent if such Patent were to issue without modification, in each case, without regard to the validity or enforceability of such Patent.

"CPA" shall have the meaning set forth in **Section 4.6.2**.

"Cpf1 Agreement" means the Cpf1 License Agreement by and between Broad and Editas, dated as of December 16, 2016, as may be amended by such parties from time to time.

"Develop" or "Development" means, with respect to a product, all activities relating to non-clinical and preclinical testing and trials, clinical testing and trials, including clinical trials, toxicology testing, modification, optimization and animal efficacy testing of pharmaceutical compounds, statistical analysis, publication and presentation of study results and reporting, preparation and submission to Regulatory Authorities with respect to such product.

"Disclosing Party" shall have the meaning set forth in **Section 6.1**.

"Dollars" or "$" means the legal currency of the United States.

"Editas Indemnitee" shall have the meaning set forth in **Section 8.1.1**.

"Editas-Owned Patents" means the Family of Patents set forth on Exhibit C under the heading [**].

"EMA" means the European Medicines Agency, and any successor entity thereto.

"Executive Officers" means the respective chief executive officers of Editas and Beam.

"Exercise Date" shall have the meaning set forth in **Section 4.3**.

"Existing Confidentiality Agreement" shall have the meaning set forth in **Section 6.6**.

"Family" means a group of (a) Licensed Patents or (b) Optioned Patents for which an Option applies (or formerly applied). Families are categorized based on subject matter and inventorship as set forth in Exhibits B and C.

"FDA" means the U.S. Food and Drug Administration, and any successor entity thereto.

"Field" means the use (including the manufacture, Development and Commercialization) of Base Editing Therapies for the treatment of any field of human diseases or conditions other than (a) the [**], (b) the [**] and (c) [**].

"GAAP" means generally accepted accounting principles.

"Governmental Authority" means any United States federal, state or local or any foreign government, or political subdivision thereof, or any multinational organization or authority or any authority, agency, division, board or commission entitled to exercise any administrative, executive, judicial, legislative, police, regulatory or taxing authority or power, any court or tribunal (or any department, bureau or division thereof), or any governmental arbitrator or arbitral body.

"Harvard" means the President and Fellows of Harvard College.

"HHMI" means the Howard Hughes Medical Institute.

"HHMI Names" shall have the meaning set forth in **Section 6.5**.

"IND" means an investigational new drug application submitted to the FDA pursuant to Part 312 of Title 21 of the U.S. Code of Federal Regulations, including any amendments thereto. References herein to IND shall include, to the extent applicable, any comparable filing(s) outside the U.S. for the investigation of any product in any other country or group of countries (such as a clinical trial application in the European Union).

"Indemnified Party" shall have the meaning set forth in **Section 8.3**.

"Indemnifying Party" shall have the meaning set forth in **Section 8.3**.

"Infringement Action" shall have the meaning set forth in **Section 5.2.2**.

"Initial Fee" shall have the meaning set forth in **Section 4.1**.

"Initial Public Offering" means the initial public offering and sale of Beam Common Stock for cash pursuant to an effective registration statement under the Securities Act.

"Institution" initially means each of Harvard, Broad and MGH and shall be expanded to include any Additional Licensor as required by **Section 2.5.3**.

"Institution Indemnitees" shall have the meaning set forth in **Section 8.1.3**.

"Institution Names" shall have the meaning set forth in **Section 6.5.**

"Institutional In-Licenses" means the 2014 MGH Agreement, the 2016 MGH Agreement, the Cas9-I Agreement, the Cas9-II Agreement, the Cpfl Agreement, and any Additional Cas9 Licenses deemed to be an Institutional In-License pursuant to **Section 2.5.3**.

"Institutional Milestone" means any commercial, regulatory, development, sales or other milestone event triggering an Institutional Milestone Payment under an Institutional In-License.

"Institutional Milestone Payment" means, with respect to a Licensed Product Covered by an Institutional Patent, a payment payable by Editas to an Institution with respect to achievement of an Institutional Milestone by such Licensed Product under the terms of an Institutional In-License after the application of any offsets, reductions, deductions or adjustments to such milestone payment allowable pursuant to the terms of such Institutional In-License.

"Institutional Patents" means, at any given time, all Licensed Patents, if any, other than the Editas-Owned Patents.

"Institutional Royalty Rate" means, with respect to a Licensed Product Covered by an Institutional Patent, the royalty rate payable by Editas to an Institution with respect to net sales of such Licensed Product under the terms of an Institutional In-License, calculated pursuant to the terms thereof (including, as applicable, any offsets, reductions, deductions or adjustment to such royalty rate allowable pursuant to the terms of such Institutional In-License).

"Institutional Sublicense Income Payment" means, on an Institutional In-License-by-Institutional In-License basis, "Sublicense Income" as defined in such Institutional In-License that is payable by Editas to an Institution under such Institutional In-License.

"Iowa" means the University of Iowa Research Foundation.

[**]

[**]

[**]

"Law" means the applicable laws, rules and regulations, including any rules, regulations, guidelines or other requirements of any Governmental Authorities (including any Regulatory Authorities) that may be in effect from time to time in any country or jurisdiction of the Territory.

"Licensed Patents" means (a) (i) the Patents set forth on Exhibit B, as may be amended or supplemented in writing by the Parties from time to time in accordance with this Agreement, (ii) any substitutions, divisionals, continuations, continuations-in-part (only to the extent of claims that are entitled to the priority date of and directed specifically to the subject matter claimed in the applications listed on Exhibit B), substitutes, counterparts and foreign equivalents thereof filed in any country, and any patents issuing thereon (but in the case of Patents issuing on continuation-in-part applications, only to the claims thereof that are entitled to the priority date of and directed specifically to the subject matter claimed in the applications listed on Exhibit B) and any reissues, reexaminations or extensions thereof, in each case, that are Controlled by Editas or its Affiliates during the Term and (b) any Optioned Patents for which Beam properly exercises its Option pursuant to **Section 2.5.1**.

"Licensed Product" means any (a) Base Editing Therapy the making, using, selling, offering for sale, exporting or importing of which is Covered by a Valid Claim of a Licensed Patent or (b) any Base Editing Therapy that is a (i) Product (as defined in the 2014 MGH Agreement or 2016 MGH Agreement, as applicable) or (ii) an Enabled Product, Enabled Service or Licensed Service (each as defined in the Cas9-I Agreement, Cas9-II Agreement or Cpf1 Agreement, as applicable) during the applicable period of time that royalties are due under the applicable Institutional In-License on the sale of such Base Editing Therapy under this Agreement.

"Losses" shall have the meaning set forth in **Section 8.1.1**.

"Major Markets" means each of the United States, Japan, United Kingdom, Germany, France, Italy and Spain.

"MGH" shall have the meaning set forth in the definition of "2016 MGH Agreement."

"MGH Indemnitees" shall have the meaning set forth in **Section 8.1.2**.

"MIT" means the Massachusetts Institute of Technology.

"Net Sales" means the gross amount billed or invoiced by or on behalf of Beam, its Affiliates, sublicensees and any Affiliates of such sublicensees (in each case, the "Invoicing Entity") or if not billed or invoiced the gross amount received by the Invoicing Entity, on sales, leases, uses or other transfers of Licensed Products, less the following to the extent applicable with respect to such sales, leases or other transfers and not previously deducted from the gross invoice price:

(a) customary trade, quantity or cash discounts to the extent actually allowed and taken;

(b) amounts actually repaid or credited by reason of rejection, return or recall of any previously sold, leased or otherwise transferred Licensed Products;

(c) rebates granted or given;

(d) allowances for non-collectible receivables;

(e) customer freight charges that are paid by or on behalf of the Invoicing Entity; and

(f) to the extent separately stated on purchase orders, invoices or other documents of sale, any sales, value added or similar taxes, custom duties or other similar governmental charges levied directly on the production, sale, transportation, delivery or use of a Licensed Product that are paid by or on behalf of the Invoicing Entity, but not including any tax levied with respect to income;

provided that:

(i) in no event shall the aggregate amount of all deductions made pursuant to clauses (d) and (e) above in any calendar quarter exceed [**] percent ([**]) of Net Sales in such calendar quarter;

(ii) Net Sales shall not include (1) sales or other transfers of any Licensed Product used for clinical trials or other research, or (2) donations for charity or compassionate use for which an Invoicing Entity does not receive consideration;

(iii) in any transfers of Licensed Products between an Invoicing Entity and an Affiliate or sublicensee of such Invoicing Entity not for the purpose of resale by such Affiliate or sublicensee, Net Sales shall be equal to the fair market value of the Licensed Products so transferred, assuming an arm's length transaction made in the ordinary course of business;

(iv) in the event that (1) an Invoicing Entity receives non-cash consideration for any Licensed Products, (2) an Invoicing Entity sells Licensed Products in a transaction not at arm's length with a non-Affiliate of an Invoicing Entity, or (3) any Licensed Product is sold by an Invoicing Entity at a discounted price that is substantially lower than the customary prices charged by such Invoicing Entity, Net Sales shall be calculated based on the fair market value of such consideration or transaction, assuming an arm's length transaction made in the ordinary course of business, provided that, if a Licensed Product is sold under circumstances in which the discounted price is the result of market forces and not a quid pro quo for value other than the monetary consideration charged in such sale of Licensed Product, such discounted price shall be deemed to be a customary price;

(v) with respect to any provision hereof requiring a calculation of fair market value, assuming an arm's length transaction made in the ordinary course of business, Invoicing Entity may use the average price of the relevant Licensed Product sold for cash during the relevant period in the relevant country; and

(vi) sales of Licensed Products by an Invoicing Entity to its Affiliate or a sublicensee for resale by such Affiliate or sublicensee shall not be deemed Net Sales. Instead, Net Sales shall be determined based on the gross amount billed or invoiced by such Affiliate or sublicensee upon resale of such Licensed Products any third party that is not an Affiliate or sublicensee of the Invoicing Entity.

"Non-Breaching Party" shall have the meaning set forth in **Section 9.3**.

"Non-Exclusive Targets" means [**].

[**]

"Option" shall have the meaning set forth in **Section 2.5.1**.

"Option Exercise Payment" shall have the meaning set forth in **Section 4.3**.

"Option Period" means, on a Family of Optioned Patents-by-Family of Optioned Patents basis, the Effective Date through the earliest of: (a) filing the first Biologics License Application or foreign equivalent for a Licensed Product Covered by an Optioned Patent within such Family, (b) the tenth anniversary of the Effective Date and (c) the termination of Editas's license to such Family of Optioned Patents as contemplated by **Section 2.3** of this Agreement.

"Optioned Patents" means (a) the Patents set forth on Exhibit C, as may be amended or supplemented in writing by the Parties from time to time in accordance with this Agreement, (b) any substitutions, divisionals, continuations, continuations-in-part (only to the extent of claims that are entitled to the priority date of and directed specifically to the subject matter claimed in the applications listed on Exhibit C), substitutes, counterparts and foreign equivalents thereof filed in any country, and any patents issuing thereon (but in the case of Patents issuing on continuations-in-part applications, only to the claims thereof that are entitled to the priority date of and directed specifically to the subject matter claimed in the applications listed on Exhibit C) and any reissues, reexaminations or extensions thereof, in each case, that are Controlled by Editas or its Affiliates during the Term. For the avoidance of doubt, "Optioned Patents" do not include Additional Cas9 Patents.

"Other IP" shall have the meaning set forth in **Section 5.2.5**.

"Pass-Through Amount" shall have the meaning set forth in **Section 4.11**.

"Patent" means (a) all patents and patent applications in any country or supranational jurisdiction in the Territory, (b) any substitutions, divisionals, continuations, continuations-in-part, provisional applications, reissues, renewals, registrations, confirmations, re-examinations, extensions, supplementary protection certificates and the like of any such patents or patent applications, (c) foreign counterparts of any of the foregoing, (d) all applications claiming priority to any of the foregoing, (e) any patents issuing on any patent application identified in clauses (a) through (e), (f) any application to which any of the foregoing claim priority and (g) any application that claims common priority with any of the foregoing.

"Patent-Based Exclusivity" means, with respect to a Licensed Product in a country in the Territory, that at least one Valid Claim of the Licensed Patents Covers such Licensed Product in such country.

"Patent Challenge" means any direct or indirect dispute or challenge, or any knowing, willful or reckless assistance in the dispute or challenge, of the validity, patentability, scope, priority, construction, non-infringement, inventorship, ownership or enforceability of any Subject Patent or any claim thereof, or opposition or assistance in the opposition of the grant of any letters patent within the Subject Patents, in any legal or administrative proceedings, including in a court of law, before the United States Patent and Trademark Office or other agency or tribunal in any jurisdiction, or in arbitration including by reexamination, inter partes review, opposition, interference, post-grant review, nullity proceeding, preissuance submission, third party submission, derivation proceeding or declaratory judgment action; provided, however, that the term Patent Challenge shall not include (a) Beam or any of its Affiliates or sublicensees being an essential party in any patent interference proceeding before the United States Patent and Trademark Office, which interference Beam or its applicable Affiliate or sublicensee acts in good faith to try to settle or (b) Beam or any of its Affiliates or sublicensees, due to its status as an exclusive licensee of patent rights other than the Subject Patents, being named by the licensor of such patent rights as a real party in interest in such an interference, so long as Beam or its applicable Affiliate or sublicensee either abstains from participation in, or acts in good faith to settle, the interference. For clarity, a Patent Challenge shall not include arguments made by Beam that (x) distinguish the inventions claimed in Beam Patents from those claimed in the Subject Patents but (y) do not disparage the Subject Patents or raise any issue of Subject Patents' compliance with or sufficiency under applicable patent laws, regulations or administrative rules, in each case (i) in the ordinary course of ex parte prosecution of the Beam Patents or (ii) in *inter partes* proceedings before the United States Patent and Trademark Office or other agency or tribunal in any jurisdiction (excluding interferences or derivation proceedings), or in arbitration, wherein the Beam Patents have been challenged.

"Patent Costs" means the reasonable fees and expenses paid to outside legal counsel, and filing, maintenance and other out-of-pocket expenses paid to Third Parties, incurred in connection with the Prosecution and Maintenance of the Subject Patents, whether incurred prior to or after the Effective Date, including fees and expenses reimbursed by Editas to the Institutions pursuant to the Institutional In-Licenses, as determined in accordance with GAAP.

"Per Share Price" means (a) with respect to Beam Preferred Stock, the greater of (i) $[**] and (ii) the price per share of Beam Preferred Stock then most recently paid by the cash purchasers thereof and (b) with respect to Beam Common Stock, the volume weighted average closing price of shares of Beam Common Stock for the 10-day period ending on the end of the last trading day of Beam Common Stock prior to the date of issuance.

"Person" means any individual, incorporated or unincorporated organization or association, Governmental Authority, or other entity.

"Prosecution and Maintenance" means, with respect to a Patent, the preparing, filing, prosecuting and maintenance of such Patent, as well as re-examinations and reissues, with respect to such Patent, together with the conduct of interferences, the defense of oppositions and other similar post-grant proceedings with respect to the particular Patent; and "Prosecute and Maintain" shall have the correlative meaning.

"Receiving Party" shall have the meaning set forth in **Section 6.1**.

"Regulatory Approval" means the approval, license or authorization of the applicable Regulatory Authority for the marketing and sale of a product for a particular indication in a country in the Territory.

"Regulatory Authority" means the FDA in the U.S. or any health regulatory authority in another country in the Territory that is a counterpart to the FDA and holds responsibility for granting Regulatory Approval in such country, including the EMA and any successor(s) thereto.

"Regulatory Materials" means regulatory applications, submissions, notifications, registrations, marketing authorizations or other written materials, correspondence, submissions made to or with a Regulatory Authority that are necessary or reasonably desirable in order to Develop, manufacture or Commercialize the Licensed Products in the Field in a particular country.

"Rockefeller" means The Rockefeller University.

"Royalty Term" means, as to a Licensed Product and a country, the period commencing on the date of the first sale by Beam, its Affiliates, licensees, or sublicensees of the relevant Licensed Product in the relevant country and shall expire on a country-by-country basis and Licensed Product-by-Licensed Product basis on the later of the following:

(a) with respect to a Licensed Product not Covered by an Editas-Owned Patent, the expiration of the last-to-expire royalty term under any Institutional In-Licenses that is applicable to such Licensed Product in such country; and

(b) with respect to a Licensed Product Covered by an Editas-Owned Patent, the later of (i) the expiration of Patent-Based Exclusivity with respect to such Licensed Product in such country and (ii) the expiration of the last-to-expire royalty term under any Institutional In-Licenses that is applicable to such Licensed Product in such country.

"Securities Act" shall mean the Securities Act of 1933, as in effect from time to time.

"Stock Purchase Agreement" means that certain Amended and Restated Series A Preferred Stock Purchase Agreement, by and among Beam and the purchasers named therein, dated as of February 9, 2018.

"Subject Patents" means the Licensed Patents and the Optioned Patents.

"Territory" means worldwide.

"Third Party" means any Person other than Editas, Beam or any Affiliate of either Party.

"Transaction Agreements" shall have the meaning set forth in **Section 4.2**.

"UTokyo" means the University of Tokyo.

"Valid Claim" means (a) a claim of an issued patent in the U.S. or in a jurisdiction outside the U.S., that has not expired, lapsed, been cancelled or abandoned, or been dedicated to the public, disclaimed, or held unenforceable, invalid, or cancelled by a court or administrative agency of competent jurisdiction in an order or decision from which no appeal has been or can be taken, including through opposition, reexamination, reissue or disclaimer, or (b) a claim of a pending patent application that is filed and being prosecuted in good faith and that has not been finally abandoned or finally rejected and which has been pending for no more than [**] years from the date of filing of the earliest patent application to which such pending patent application claims priority.

"Wageningen" means Wageningen University.

1.2 Interpretation. The captions and headings to this Agreement are for convenience only, and are to be of no force or effect in construing or interpreting any of the provisions of this Agreement. Unless specified to the contrary, references to Sections or Exhibits shall refer to the particular Sections or Exhibits of or to this Agreement and references to this Agreement include all Exhibits hereto. Unless context otherwise clearly requires, whenever used in this Agreement:

1.2.1 any definition of or reference to any agreement, instrument or other document refers to such agreement, instrument other document as from time to time amended, supplemented or otherwise modified (subject to any restrictions on such amendments, supplements or modifications set forth herein or therein),

1.2.2 any reference to any Law refers to such Law as from time to time enacted, repealed or amended,

1.2.3 the words "include" or "including" shall be construed as incorporating, also, "but not limited to" or "without limitation;"

1.2.4 the word "day," "quarter" or "year" (and derivatives thereof, e.g., "quarterly") shall mean a calendar day, calendar quarter or calendar year unless otherwise specified (and "annual" or "annually" refer to a calendar year);

1.2.5 the word "notice" shall mean notice in writing (whether or not specifically stated) and shall include notices, consents, approvals and other written communications contemplated under this Agreement;

1.2.6 the word "hereof," "herein," "hereby" and derivative or similar word refers to this Agreement (including any Exhibits);

1.2.7 the word "or" shall have its inclusive meaning identified with the phrase "and/or;"

1.2.8 the words “will” and “shall” shall have the same obligatory meaning;

1.2.9 provisions that require that a Party or the Parties hereunder “agree,” “consent” or “approve” or the like shall require that such agreement, consent or approval be specific and in writing, whether by written agreement, letter, approved minutes or otherwise;

1.2.10 the word “sublicensee”, when used to refer to Beam’s sublicensees, shall include any Third Party that Editas enters into a direct license with pursuant to **Section 2.4**;

1.2.11 words of any gender include the other gender; and

1.2.12 words using the singular or plural number also include the plural or singular number, respectively.

ARTICLE 2
LICENSE AND OPTIONS

2.1 License Grants to Beam.

2.1.1 Exclusive License. Subject to the terms and conditions of this Agreement, commencing on the Effective Date, Editas hereby grants to Beam an exclusive (even as to Editas and its Affiliates) right and license in the Field in the Territory, with the right to grant sublicenses subject to **Section 2.4**, under Editas’s right, title and interest in the Licensed Patents to Develop, Commercialize, make, have made, use, offer for sale, sell and import Licensed Products. Beam hereby acknowledges and agrees that Editas’s right, title and interest in the Licensed Patents licensed by Editas pursuant to the Cas9-I Agreement, the Cas9-II Agreement and the Cpf1 Agreement are non-exclusive with respect to the Non-Exclusive Targets.

2.1.2 Research License. Subject to the terms and conditions of this Agreement, Editas hereby grants to Beam a royalty-free, non-exclusive right and license, without any right to grant sublicenses, under Editas’s right, title and interest in each Optioned Patent to perform research activities in the Field, provided that the license granted hereunder shall expire with respect to each Family of Optioned Patents upon the expiration of the Option Period therefor.

2.1.3 Updates to the Field. In the event that, at any time during the Term of this Agreement, Editas becomes able to grant to Beam any additional rights in the Field [**], (a) Editas shall promptly (but in any event within [**] days) notify Beam in writing of the availability and description of all such additional rights (or, if Editas does not provide such notification, but Beam becomes aware of the availability or such additional rights through information available to it, Beam may so notify Editas) and (b) unless Beam requests otherwise within [**] days after receiving such notice from Editas (as applicable), (i) the definition of [**] or [**], as applicable, under this Agreement shall be deemed amended to reflect the less expansive field under which [**] or [**] has [**] rights under the Licensed Patents and (ii) the definition of “Field” hereunder shall be deemed accordingly amended to include the applicable additional [**] rights; provided that in the event the additional rights available to Editas in the [**] or [**] permit such rights to be used for some, but not all, uses in the Field under this Agreement, the definition of “Field” hereunder shall be deemed amended only to the extent of such rights available to Editas at such time. The Parties shall take all reasonable actions, if any,

necessary to effect or further document the amendments in clause (b) of the preceding sentence. For clarity, nothing in this **Section 2.1.3** shall, or is intended to, (i) result in any fewer or diminished rights being granted to Beam under this Agreement, (ii) conflict with [**] or (iii) permit Beam's use of the Licensed Patents or Optioned Patents outside of the Development or Commercialization of Base Editing Therapies.

2.1.4 Additional Licensed Patents. In the event that, during the Term of this Agreement, a Party becomes aware of any issued Patent (whether such Patent issued prior to or after the Effective Date) Controlled by Editas or by an Affiliate of Editas that was an Affiliate of Editas as of the Effective Date that (a) is not set forth on Exhibit B or Exhibit C, (b) was so Controlled as of the Effective Date and (c) Covers the development, use, manufacture or sale of a Base Editing Therapy in the Field in the Territory, such Party shall notify the other Party and upon Beam's request, the Parties shall, subject to Editas's consent (such consent not to be unreasonably withheld, delayed or conditioned) and the Parties' reasonable agreement on the Family of Patents to which such issued Patent belongs, take all necessary actions to make such issued Patent a Licensed Patent or Optioned Patent hereunder as applicable, including amending Exhibit B or Exhibit C of this Agreement to include such issued Patent, including the appropriate Family in Exhibit B or Exhibit C in which such issued Patent should be listed, if applicable. If the Parties are unable to agree on the Family of Patents to which a Patent belongs as provided in the immediately preceding sentence within [**] days following Beam's request to have such Patent be a Licensed Patent or Optioned Patent hereunder, then such matter shall be determined in accordance with **Section 10.2**. For the avoidance of doubt, in the event that a Patent is made an Optioned Patent in a Family for which the applicable Option has been exercised prior to the date that such Patent is listed in such Family, such Patent shall, upon being listed in such Family, automatically be deemed licensed hereunder with such Family without any obligation to make any additional Option Exercise Payment with respect to such Patent.

2.2 Institutional In-Licenses. Beam acknowledges and agrees that the rights, licenses and sublicenses granted by Editas to Beam in this Agreement (including any rights to sublicense) are subject to the terms of the Institutional In-Licenses and the rights granted to the Institutions thereunder, the scope of the licenses granted to Editas or the applicable Affiliate thereunder and the rights retained by such Institutions and any other Third Parties (including Governmental Authorities) set forth therein, including (a) Sections 2.1, 2.2, 2.5, 2.6 2.8, 2.9, 2.10 and 10.3.1.2 of the Cas9-I Agreement, (b) Sections 2.1, 2.2, 2.5, 2.6, 2.8, 2.9, 2.10 and 10.3.1.2 of the Cas9-II Agreement, (c) Sections 2.1, 2.2, 2.5, 2.6, 2.8, 2.9, 2.10 and 10.3.1.2 of the Cpf1 Agreement, (d) Sections 2.1(a), 2.3 and 2.4 of the 2014 MGH Agreement and (e) Sections 2.1(a), 2.3 and 2.4 of the 2016 MGH Agreement (in each case ((a) - (e)), to the extent the Patents licensed under such Institutional In-License(s) are Subject Patents hereunder). At Editas's request, Beam shall use Commercially Reasonable Efforts to, and cause its sublicensed Affiliates and all sublicensees to use Commercially Reasonable Efforts to, take such actions, as may be required to assist Editas in complying with its obligations under the applicable Institutional In-Licenses solely to the extent applicable to Beam's rights or obligations under this Agreement, including (v) Sections 4.5.3, 8.1, 9.2.3 and 11.2 of the Cas9-I Agreement, (w) and Sections 4.5.3, 8.1, 9.2.3 and 11.2 of the Cas9-II Agreement, (x) Sections 4.4.3, 8.1, 9.2.3 and 11.2 of the Cpf1 Agreement, (y) Sections 10.5, 11.1, and 12.7 of the 2014 MGH Agreement and (z) Sections 10.5, 11.1, and 12.7 of the 2016 MGH Agreement (in each case ((v) – (z)), to the extent the Patents licensed under such Institutional In-License(s) are Subject Patents hereunder).

2.3 Termination of Institutional In-Licenses.

2.3.1 Beam acknowledges and agrees that, if any of the licenses granted to Editas by Harvard and/or Broad under the Cas9-I Agreement, the Cas9-II Agreement and/or the Cpf1 Agreement is terminated, in whole or in part, including due to any failure by Editas and Beam, and their Affiliates and sublicensees, to meet any of the diligence obligations (including any diligence milestone) set forth in any of those Institutional In-Licenses, then (a) if at the time of such termination, any Patents licensed under such terminated license are Optioned Patents hereunder, then Beam's Option with respect to such Optioned Patents shall immediately terminate and (b) if at the time of such termination, the Patents licensed under such terminated license are Licensed Patents hereunder, then Beam's license under such terminated license(s) shall automatically terminate [**] days following the effective date of termination of the Cas9-I Agreement, the Cas9-II Agreement and/or Cpfl Agreement, as applicable, subject to Beam's right to receive a direct license from Harvard and/or Broad pursuant to Section 10.3.1.2 of the Cas9-I Agreement, the Cas9-II Agreement and/or the Cpf1 Agreement, as applicable.

2.3.2 Beam acknowledges and agrees that, if any of the licenses granted to Editas by MGH under the 2014 MGH Agreement or the 2016 MGH Agreement is terminated, in whole or in part, including due to any failure by Editas and Beam, and their Affiliates and sublicensees, to meet any of the diligence obligations (including any diligence milestone) set forth in any of those Agreements, then, at the time of such termination, this Agreement shall be deemed assigned in part by Editas to MGH solely with respect to the Licensed Patents licensed under such terminated license and related rights and obligations as set forth in Section 10.8 of the 2014 MGH Agreement and Section 10.8 of the 2016 MGH Agreement. Editas shall take all actions reasonably required to effect any assignment to MGH under this **Section 2.3.2**.

2.4 Beam's Sublicensing Rights. Beam shall have the right to grant sublicenses under the rights granted to it under **Section 2.1.1** to any of its Affiliates and Third Parties. Beam shall provide Editas with a fully-executed copy of any agreement (which Beam may redact as necessary to protect confidential or commercially sensitive information) reflecting any such sublicense promptly after the execution thereof. If Beam grants a sublicense, the terms and conditions of this Agreement and the Institutional In-Licenses that are applicable to sublicensees shall apply to such sublicensee to the same extent as they apply to Beam. Beam assumes full responsibility, and shall remain primarily liable, for causing the performance of all obligations of each Beam Affiliate and sublicensee to which it grants a sublicense, and will itself pay and account to Editas for all payments due under this Agreement by reason of operation of any such sublicense. Notwithstanding the foregoing, unless and until the receipt of written agreement by the applicable Institutions to permit further sublicensing to a Third Party, Beam shall not have the right to grant any sublicenses (other than to Affiliates of Beam and other than as may be agreed in writing by the applicable Institutions, in each case subject to all restrictions on the granting of sublicenses herein). In the event and to the extent that an Institution does not permit further sublicensing to a Third Party by Beam without the payment of material additional consideration, then upon Beam's request at any time during the Term, Editas shall grant, without further consideration, a direct license to such Third Party as Beam directs, as and to the extent permitted under Editas's obligations to the applicable Institutions and provided such direct

license is within the scope of Beam's licenses granted under **Section 2.1.1** and provided further, that any sale or transfer of Licensed Products by such direct sublicensee under such direct sublicense shall be included in Net Sales hereunder, and provided even further that Editas does not incur any additional obligations or expenses under the terms of such grant.

2.5 Option.

2.5.1 Grant of Option. Editas hereby grants to Beam an exclusive option to obtain the license set forth in **Section 2.1.1** with respect to each Family of Optioned Patents, exercisable on a Family-by-Family basis at any time during the applicable Option Period (each, an "Option") by providing written notice of exercise to Editas and paying the Option Exercise Payment for such Family in accordance with **Section 4.3**. Upon exercise of an Option with respect to a Family of Optioned Patents, all Patents in such Family shall become Licensed Patents and shall be added to Exhibit B; provided that, for clarity, the failure to add such Patents to Exhibit B shall not affect their status as Licensed Patents under this Agreement. Beam hereby acknowledges and agrees that Editas's right, title and interest in the Optioned Patents licensed by Editas pursuant to the Cas9-I Agreement, the Cas9-II Agreement and the Cpf1 Agreement are non-exclusive with respect to the Non-Exclusive Targets.

2.5.2 Expiration. Each of Beam's Options hereunder shall expire on the expiration of the applicable Option Period, upon which expiration the applicable Family of Optioned Patents shall cease to be Optioned Patents under this Agreement.

2.5.3 [**] Patents. If during the Term, Editas or its Affiliates (other than any person or entity that acquires all or any part of Editas or an Affiliate of Editas, and any affiliates of such person or entity) enters into a license agreement for the license of one or more Patents set forth on Exhibit D (collectively, the "[**] Patents"), then, Editas shall promptly provide to Beam a written description of such [**] Patents, together with a true and correct copy of the license or other agreement pursuant to which Editas licensed such [**] Patents (each such license, an "[**] License," and the licensor thereunder an "Additional Licensor") (which Editas may redact as to terms not material to a sublicensee thereunder). Editas or its applicable Affiliate will use commercially reasonable efforts to obtain sublicensing rights in any such license to any [**] Patents of a scope that would permit Beam to elect to receive a sublicense of such rights under this **Section 2.5.3**. If such agreement permits the sublicensing of rights to Beam, then (a) if Beam has previously exercised its Option with respect to the Family of Optioned Patents set forth on Exhibit C under the heading [**] Beam may elect, by written notice delivered to Editas within [**] days after Beam's receipt of such [**] License, to receive a sublicense of rights granted under such [**] License, and thereafter (i) such [**] License shall become an Institutional In-License hereunder, (ii) the Additional Licensor shall become an Institution hereunder and (iii) the [**] Patents shall become Licensed Patents hereunder and shall be added to Exhibit B or (b) if Beam has not previously exercised its Option with respect to the [**] Patent Family and the Option Period for such Family has not yet expired, Beam shall have the right, exercisable if and at the time of Beam's exercise of its Option with respect to the [**] Patent Family, to receive a sublicense of rights granted under such [**] License, in which case upon exercise of such Option and payment of the applicable fee, (i) such [**] License shall become an Institutional In-License hereunder, (ii) the Additional Licensor shall become an Institution hereunder and (iii) the [**] Patents shall become Licensed Patents hereunder and shall be added to Exhibit B, provided in each case ((a) and (b)), that the [**] Patents will only be included in the Licensed Patents if Beam agrees in writing to assume and perform any pass-through financial obligations and other obligations applicable to sublicensees under such [**] License.

2.6 No Grant of Rights to Third Parties; Inclusive Innovation Model.

2.6.1 Except for (a) licenses to Institutions for research and education purposes or (b) subject to **Section 2.6.2**, under the Cas9-I Agreement, Cas9-II Agreement and the Cpf1 Agreement, exclusive or non-exclusive licenses granted by an Institution to a Third Party making a Bona Fide Proposal (as defined in such Institutional In-Licenses) to an Institution under Section 2.6 of such Institutional In-Licenses, in each case of clauses (a) and (b), as required under any Institutional In-License, Editas shall not itself exercise, nor grant to any Third Party, rights to the Subject Patents that are inconsistent with or that would interfere with the grant of the rights, Option and licenses granted or potentially to be granted to Beam hereunder.

2.6.2 In the event that an Institution provides Editas with a Proposed Product Notice or a Proposed Broad Target Notice (each as defined in the applicable Institutional In-License to which such Institution is a Party) for a potential product or target in the Field, Editas shall promptly notify Beam (but in any event within [**] days after receipt of such notice) and the Parties shall discuss the matter and take such actions as the Parties mutually agree in good faith are reasonably necessary to avoid Beam's loss of rights to such potential product or target under this Agreement; [**].

2.7 No Implied Licenses; Reservation of Rights. Except as explicitly set forth in this Agreement, neither Party shall acquire under this Agreement any license, intellectual property interest or other rights, by implication or otherwise, under any Patents or other intellectual property rights Controlled by the other Party or its Affiliates. Any rights of Editas not expressly granted to Beam pursuant to this Agreement shall be retained by Editas.

2.8 Rights Upon Bankruptcy. All rights and licenses granted under or pursuant to this Agreement are, and shall otherwise be deemed to be, for purposes of Section 365(n) of Title 11 of the United States Code and other similar laws in any jurisdiction outside the U.S. (collectively, the "Bankruptcy Laws"), licenses of rights to "intellectual property" as defined under the Bankruptcy Laws. If a case is commenced during the term of this Agreement by or against a Party under Bankruptcy Laws then, unless and until this Agreement is rejected as provided in such Bankruptcy Laws, such Party (in any capacity, including debtor-in-possession) and its successors and assigns (including a trustee) shall perform all of the obligations provided in this Agreement to be performed by such Party. If a case is commenced during the term of this Agreement by or against a Party under the Bankruptcy Laws, this Agreement is rejected as provided in the Bankruptcy Laws and the other Party elects to retain its rights hereunder as provided in the Bankruptcy Laws, then the Party subject to such case under the Bankruptcy Laws (in any capacity, including debtor-in-possession) and its successors and assigns (including a Title 11 trustee), shall provide to the other Party copies of all information necessary for such other Party to prosecute, maintain and enjoy its rights under the terms of this Agreement promptly upon such other Party's written request therefor. All rights, powers and remedies of the non-bankrupt Party as provided herein are in addition to and not in substitution for any and all other

rights, powers and remedies now or hereafter existing at law or in equity (including the Bankruptcy Laws) in the event of the commencement of a case by or against a Party under the Bankruptcy Laws. All payments owed to Editas under **Sections 4.5**, **4.6** and **4.7** are, and shall otherwise be deemed to be, for purposes of the Bankruptcy Laws, "royalties" as defined under the Bankruptcy Laws.

ARTICLE 3
DEVELOPMENT AND COMMERCIALIZATION

3.1 Alliance Coordinators. Each of the Parties shall appoint one (1) representative possessing a general understanding of this Agreement and of drug product Development to act as the primary point of contact between the Parties with respect to this Agreement (each, a "Alliance Coordinator"). Subject to the foregoing, either Party may replace its Alliance Coordinator at any time with prior notice to the other Party. The Alliance Coordinators shall conduct quarterly in-person meetings or teleconferences, in which the discussions may include (a) the Development, Commercialization and regulatory matters of Licensed Products, (b) general corporate updates with respect to each Party, including updates on each Party's Patent prosecution efforts and other developments with respect to Licensed Products or Licensed Patents (provided that, neither Party shall be required to disclose any information it considers sensitive concerning areas of its business not related to Licensed Products or Licensed Patents) and (c) the potential for mutually-beneficial business development opportunities (including potential additional partnering and licensing arrangements), and may invite additional personnel from either Party to attend any such meetings or teleconferences. Beam shall update Editas, through the Alliance Coordinators at the quarterly meetings described above in this **Section 3.1**, with any material program updates related to the Development or Commercialization of the Licensed Products in the Field.

3.2 Diligence; Progress Reports. Beam shall use Commercially Reasonable Efforts (a) to Develop one (1) Licensed Product in each of the Major Markets, including filing the first IND with respect to a Licensed Product within [**] years of the Effective Date and (b) with respect to any Licensed Product that has received Regulatory Approval in a country in the Territory, to Commercialize such Licensed Product in such country. Beam shall provide a written report to Editas on an [**] basis beginning on the [**] anniversary of the Effective Date that reasonably summarizes Beam's exercise of Commercially Reasonable Efforts under this **Section 3.2**. In addition, Beam shall promptly notify Editas in the event that the Beam/Harvard License is terminated, which notice shall include the underlying reason for such termination.

3.3 Regulatory Activities. Beam shall have the sole right and responsibility to prepare and file for Regulatory Approval and otherwise obtain and maintain approvals from Regulatory Authorities that are necessary for Development, manufacture and Commercialization of the Licensed Products in the Field in the Territory, and otherwise interact with Regulatory Authorities as appropriate with respect to the Licensed Products. Beam will own all such Regulatory Approvals and other Regulatory Materials for Licensed Products.

ARTICLE 4.
COMPENSATION

4.1 Initial Fee. In partial consideration for the rights granted to Beam hereunder Beam shall pay Editas a one-time, non-refundable, non-creditable payment of One Hundred Eighty Thousand Dollars ($180,000) upon execution of this Agreement (the "Initial Fee"). Such payment shall be allocated between consideration for the rights granted to Beam hereunder and reimbursement for past Patent Costs as set forth on the Allocation Schedule.

4.2 Equity Issuance. In partial consideration for the rights granted hereunder, on the date hereof, Beam shall issue to Editas (for no additional consideration), 1,833,333 shares of Series A-1 Preferred Stock and 1,222,222 shares of Series A-2 Preferred Stock (each as defined in the Stock Purchase Agreement), having an aggregate value, based on the price paid by Beam's investors for such shares, of $3,666,666 (the "Beam Series A Shares" and such issuance, the "Initial Equity Issuance"). Such aggregate value shall be allocated between [**] and [**]. In connection with such issuance, (a) Beam shall deliver to Editas a certificate, signed by an executive officer of Beam, certifying that the representations and warranties set forth in Section 2 of the Stock Purchase Agreement are true and correct as of the date of such issuance (except as qualified by a disclosure schedule that may be attached to such certificate), provided that, for purposes of such certificate, any representations and warranties regarding the "Shares" (as used in the Stock Purchase Agreement) shall be deemed to be representations and warranties regarding the Beam Series A Shares and all other capitalized terms used in the representations and warranties shall have the definitions set forth in the Stock Purchase Agreement, (b) Editas shall deliver to Beam a certificate, signed by an authorized officer of Editas, certifying that the representations and warranties set forth in Section 3 of the Stock Purchase Agreement are true and correct as of the date of such issuance and (c) Editas shall become a party to the Investors' Rights Agreement, the Right of First Refusal and Co-Sale Agreement and the Voting Agreement (each as defined in the Stock Purchase Agreement and collectively, the "Transaction Agreements"). Beam further agrees that for so long as Editas holds some or all of the Beam Series A Shares or Beam Preferred Stock it shall not (i) amend any of the Transaction Agreements in a manner that would diminish Editas's rights thereunder, including, changing the definition of Major Investor in the Investors' Rights Agreement, (ii) execute any waiver under the Transaction Agreements that would waive a right held by Editas under such Transaction Agreements or (iii) amend or restate Beam's Second Amended and Restated Certificate of Incorporation (as may be amended and/or restated from time to time) in a manner that would diminish any of the rights held by Editas in connection with being a holder of Beam Series A Shares, in each case, without the written consent of Editas; provided that nothing in this sentence shall prohibit, or require Editas's consent to, an amendment of or waiver under any of the Transaction Agreements or an amendment or restatement of the Beam's Amended and Restated Certificate of Incorporation that in each case would not affect Editas differently than or in a disproportional manner to other holders of Beam Series A Shares or Beam Preferred Stock, as applicable, even if such effect was adverse.

4.3 Option Exercise Payment. If Beam elects to exercise an Option with respect to a Family of Optioned Patents, Beam shall pay the amount set forth below, calculated on the date that Beam provides notice to Editas of such election (such date, the "Exercise Date" and each such payment, an "Option Exercise Payment"). The applicable Option Exercise Payment shall

be payable on a Family-by-Family basis, with each payment becoming payable with respect to the applicable Family when Beam exercises its Option with respect to such Family (i.e., if Beam were to exercise as to all three Families of Optioned Patents after the [**] anniversary of the Effective Date, such exercise payments would in aggregate total [**]. Each Option Exercise Payment shall be allocated between [**] and [**]. Each Option Exercise Payment shall be payable by Beam within [**] days after the applicable Exercise Date. Beam shall have the right, but not the obligation to settle its obligation to make any Option Exercise Payment by issuing to Editas (for no additional consideration) a number of shares of Beam Preferred Stock (or, following an Initial Public Offering of Beam, a number of shares of Beam Common Stock) equal to the quotient of the Option Exercise Payment being settled thereby divided by the Per Share Price, provided, that, (a) if the issuance of such shares occurs prior to the Initial Public Offering of Beam, Beam shall deliver to Editas a certificate, signed by the Executive Officer of Beam, certifying that the representations and warranties set forth in the last stock purchase agreement entered into by Beam and a bona fide cash purchaser of preferred stock are true and correct as of the date of such issuance (except as qualified by a disclosure schedule that may be attached to such certificate), (b) if the issuance of such shares occurs after the Initial Public Offering of Beam and Beam is eligible to file a registration statement on Form S-3, the applicable shares of Beam Common Stock so issued shall be registered by Beam for resale within [**] days after such issuance and (c) if the issuance of such shares would cause Editas to have to consolidate Beam's financials with its own, as determined in good faith by Editas and in accordance with GAAP, then Beam shall only be permitted to make such payment in shares to the extent that Editas would not have to consolidate Beam's financial statements with its own, and shall remit the remainder of such Option Exercise Payment in cash.

Exercise Date	Option Exercise Payment (in $ millions)
[**]	[**]
[**]	[**]
[**]	[**]

4.4 Institutional Payments Generally.

4.4.1 With respect to any Institutional Milestone Payments, costs payable by Beam to Editas pursuant to **Section 4.6**, any Institutional Royalty Rate and any Institutional Sublicense Income Payments, Editas shall use reasonable efforts to avail itself of all applicable reductions to such payments and costs, if any, that are available under the relevant Institutional In-License prior to invoicing Beam for such payment or cost. In the event Beam notifies Editas of reductions to such payments or costs that are available to Editas under an Institutional In-License, Editas shall use reasonable efforts to avail itself of such applicable reductions.

4.4.2 For the avoidance of doubt, notwithstanding anything to the contrary in this Agreement, Editas, and not Beam, shall be responsible for the payment of any Success Payment (as defined in the applicable Institutional In-License) under the 2016 MGH Agreement, the Cas9-II Agreement or the Cpf1 Agreement.

4.5 Institutional Milestone Payments and Institutional Sublicense Income Payments. With respect to any Licensed Product Covered by an Institutional Patent or any payment made by Beam, its Affiliates or its sublicensees to Editas hereunder, Beam shall pay Editas the full amount of any (i) [**] plus (ii) Institutional Sublicense Income Payment due from Editas to an Institution in connection with any payment made to Editas hereunder (including in the case of both clauses (i) and (ii) any incremental amounts to gross up Editas, such that Editas is not required to pay the Institution any amounts in connection with such Sublicense Income Payment from Editas's own funds), provided, that in the case of the foregoing clause (ii), Beam shall not be required to make such payment in connection with any Option Exercise Payment, the Initial Fee or the Initial Equity Issuance. Within [**] days after achievement of an Institutional Milestone, Beam shall notify Editas of the achievement of such Institutional Milestone, and shall pay to Editas the full amount of the applicable Institutional Milestone Payment. Beam shall pay to Editas the full amount of any applicable Institutional Sublicense Income Payment within [**] days after receipt of an invoice from Editas therefor.

4.6 Institutional In-License Costs. Beam shall pay to Editas:

4.6.1 [**]% of any Annual Maintenance Fees payable by Editas under any Institutional In-License pursuant to which Editas licenses any Licensed Patents to Beam, within [**] days following receipt of an invoice from Editas therefor; provided that such invoice shall be issued to Beam no sooner than [**] days [**] before Editas owes such Annual Maintenance Fee to the applicable Institution; and

4.6.2 [**]% of Patent Costs incurred by Editas or the Institutions with respect to the Prosecution and Maintenance of the Licensed Patents (the "Annual Patent Costs"), provided however, that Beam's share of the Annual Patent Costs for the period beginning on the Effective Date and ending on the [**] year anniversary thereof (the "Initial Annual Patent Cost Period") shall equal $[**]**.** For years beginning after the Initial Annual Patent Cost Period, Beam shall engage, at Beam's cost and expense, an independent accounting firm of regionally recognized standing (the "CPA") selected by Beam and reasonably acceptable to Editas for the purpose of calculating the amount owed to Editas pursuant to this **Section 4.6.2**, provided, that such calculated amount shall be subject to Editas's review and confirmation, not to be unreasonably withheld. Such analysis shall be performed [**] per calendar year, promptly after the end of such calendar year, and shall be conducted under appropriate confidentiality and non-use provisions, provided, that the first analysis may cover a period longer than [**] months (but in no event, longer than [**] months) such that the subsequent analysis can begin on the January 1st immediately following the period covered by the first analysis. Editas agrees to provide the CPA with access to relevant portions of books and records reasonably related to Patent Costs, provided, that Editas may redact such portions to the extent not required for such calculation. In addition, the CPA shall have reasonable access, on reasonable notice and during Editas's normal business hours, to individuals, records and responses to questions from auditors in a timely manner and have the right to make copies of relevant portions of Editas's books and records;

provided that, any such copies shall be the Confidential Information of Editas. Prior to issuing a final calculation of the Annual Patent Costs, the CPA shall provide a preliminary calculation thereof to Beam and Editas. Thereafter, each Party shall have a reasonable opportunity to review and comment on such preliminary calculation, and to discuss such comments with the CPA and each other. Upon resolution of any disputes regarding such preliminary calculation, the CPA shall issue a final report detailing its calculation of the Annual Patent Costs, provided that such calculation shall be subject to dispute resolution pursuant to **Sections 10.2** and **10.3** at Editas's request. Unless disputed by Editas, Beam shall pay [**]% of the Annual Patent Costs so determined within [**] days following the CPA's delivery of its final report.

4.7 Royalties. Beam shall pay to Editas royalties on Licensed Products, on a Licensed Product-by-Licensed Product and country-by-country basis, in respect of Net Sales of such Licensed Product during the applicable Royalty Term, at a royalty rate equal to the applicable Institutional Royalty Rate, *plus* (a) subject to the terms of this **Section 4.7**, if such Licensed Product is not Covered by an Editas-Owned Patent, [**]% or (b) if such Licensed Product is Covered by an Editas-Owned Patent, the additional royalty amount set forth below.

Aggregate World-Wide Net Sales of Licensed Products per calendar year	**Royalty Rate Applicable to such Net Sales**
Net Sales up to $[**]	[**]%
(b) Incremental Net Sales greater than $[**]	[**]%

Notwithstanding anything to the contrary in this Agreement, in the event that any license granted to Editas by an Institution under an Institutional In-License is terminated for a reason other than Beam's material breach of this Agreement and a direct license or assigned license to Beam from such Institution is effected as detailed in **Sections 2.3.1** or **2.3.2**, if Beam's financial obligations with respect to a Licensed Product increase under the direct or assigned license (in relation to Beam's financial obligations with respect to such Licensed Product under this Agreement), the Parties agree that Beam shall be entitled, as its sole and exclusive remedy and Editas's sole and exclusive liability with respect to such termination, to offset any amount of such increased financial obligations against any royalty owed to Editas with respect to Licensed Products Covered by such Licensed Patent under clause (a) of this **Section 4.7** until the entire amount of such increased obligation has been offset, provided, that in no event shall such royalty be reduced to less than [**] ([**]%) of what would otherwise have been due to Editas under such clause (i.e. any [**]% royalty owed may not be decreased below [**]%), provided, further, that Beam shall have the right to carry forward as offsets any portions of such increased financial obligations that cannot be deducted due to the limitation in the immediately preceding proviso to apply against future royalties payable to Editas under clause (a) of this **Section 4.7**, subject to such limitation in the immediately preceding proviso, until such amounts are fully exhausted.

4.8 Reports and Payment. During the Royalty Term for each Licensed Product, Beam shall provide written unaudited reports to Editas within [**] days after the end of each [**] covering sales of Licensed Products on a product-by-product, country-by-country basis in the Territory by such Party, its Affiliates, licensees, and sublicensees during such [**]. Each such

written report shall provide (a) the Net Sales in Dollars and local currency for each Licensed Product in the Territory during the reporting period; (b) the deductions (by deduction category) from gross amounts billed or invoiced taken in calculating such Net Sales; (c) the royalties payable, in Dollars, which shall have accrued hereunder with respect to such Net Sales and (d) to the extent required under any applicable Institutional In-License, the number of units of such Licensed Product(s) sold during the reporting period. In addition, each such written report shall contain such additional information as reasonably requested by Editas in order to satisfy Editas's reporting obligations to any Institution. The information contained in each report under this **Section 4.8** shall be considered Confidential Information of Beam, provided that Editas may share such report with the Institutions as necessary to comply with its obligations under the Institutional In-Licenses, subject to confidentiality and non-use restrictions at least as strict as those that apply to Editas's confidential information under such applicable Institutional In-License. Concurrent with the delivery of each such report, Beam shall make the royalty payment due to Editas under **Section 4.7** for the [**] covered by such report. In the case of transfers or sales of any Licensed Product between Beam and an Affiliate, licensee or sublicensee, a royalty shall be payable only with respect to the sale of such Licensed Product to an independent Third Party that is not an Affiliate, licensee or sublicensee of Beam. Each report to be delivered by Beam pursuant to this **Section 4.8** shall be certified in writing on behalf of Beam as true, correct and complete in all material respects with respect to the information required solely to the extent Editas is required to certify in writing that such information is true, correct and complete in a report delivered to an Institution under an Institutional In-License. In addition, during the Royalty Term for each Licensed Product, within [**] days following the end of each [**], Beam will provide Editas a preliminary non-binding good faith report estimating the total Net Sales of, and royalties payable to Editas for, such Licensed Product projected for such [**]; provided that, Beam will have no liability as a result of any disparity between such reports and the reports delivered pursuant to the first sentence of this **Section 4.8**.

4.9 Payment Method; Late Payments. Payments hereunder, other than payments made in Beam Preferred Stock or Beam Common Stock pursuant to **Section 4.3**, shall be paid by wire transfer, or electronic funds transfer (EFT) in immediately available funds to a bank account designated by Editas at least [**] days in advance of such payment. Royalties and any other payments required to be paid by Beam pursuant to this Agreement shall, if overdue, bear interest until payment at a rate per annum equal to the lesser of the prime or equivalent rate per annum quoted by *The Wall Street Journal* on the first business day after such payment is due, plus [**] percent ([**]%) or, if lower, the highest rate permitted by applicable Law, calculated on the number of days such payments are paid after such payments are due and compounded [**]. The payment of such interest shall not restrict Editas from exercising any other rights it may have because any payment is overdue.

4.10 Currency. All amounts payable and calculations hereunder shall be in Dollars. Conversion of sales recorded in local currencies to Dollars will first be determined in the foreign currency of the country in which such Licensed Products are sold and then converted to Dollars at a [**] day trailing average published by the *Wall Street Journal* (U.S. editions) for conversion of the foreign currency into Dollars on the last day of the quarter for which such payment is due.

4.11 Taxes and Withholding. If Beam is required to deduct or withhold from any payment due to Editas hereunder any withholding taxes under the Laws or regulations of any jurisdiction or Governmental Authority, then Beam shall pay such withholding taxes to the applicable Governmental Authority and make the payment to Editas of the net amount due after deduction or withholding of such taxes. Such withholding taxes shall be treated for all purposes of this Agreement as having been paid to Editas. Beam shall submit reasonable proof of payment of the withholding taxes within a reasonable period of time after such withholding taxes are remitted to the Governmental Authority. The Parties shall reasonably cooperate to eliminate or minimize any such withholding taxes. Notwithstanding the foregoing, if Beam is required to deduct or withhold withholding taxes from any payment due hereunder that is required to be paid to an Institution under an Institutional In-License (a "Pass-Through Amount"), then the Pass-Through Amount shall be treated as a separate payment and such Pass-Through Amount shall be increased so that the net amount thereof payable to Editas, after the deduction of all withholding taxes directly related to such Pass-Through Amount, equals the Pass-Through Amount; provided, however, that Editas shall take all reasonable best efforts necessary to obtain any lawful reductions or eliminations of such withholding taxes available under Law. Beam shall submit reasonable proof of payment of any withholding taxes within a reasonable period of time after such withholding taxes are remitted to the Governmental Authority.

4.12 Accounting.

4.12.1 Beam agrees to keep, and to require its Affiliates, licensees, and sublicensees to keep, full, clear and accurate records for a minimum period of [**] years after the conclusion of the calendar year in which the relevant payment is owed pursuant to this Agreement, setting forth the sales and other disposition of Licensed Products sold or otherwise disposed of in sufficient detail to enable royalties and compensation payable to the Editas hereunder to be determined.

4.12.2 Beam further agrees, upon not less than [**] days prior written notice, to permit, and to require its Affiliates, licensees, and sublicensees to permit, the books and records relating to such Licensed Product to be examined by an independent accounting firm selected by Editas for the purpose of verifying reports provided by Beam under this this Agreement. Such audit shall not be performed more frequently than once in any [**]-month period or once with respect to any reporting period, and shall be conducted under appropriate confidentiality provisions, for the sole purpose of verifying the accuracy and completeness of all financial, accounting and numerical information and calculations provided under this Agreement. The independent accounting firm shall have reasonable access, on reasonable notice and during Beam's normal business hours to individuals, records and responses to questions from auditors in a timely manner and have the right to make copies of relevant portions of Beam's books and records; provided that, any such copies shall be the Confidential Information of Beam, shall be protected by appropriate confidentiality obligations and shall not be shared with Editas or any other Person.

4.12.3 Such examination is to be made at the expense of Editas, except if the results of the audit reveal an underpayment of royalties, milestones, or other payments to Editas under this Agreement of [**] percent ([**]%) or more in any calendar year, in which case reasonable audit fees for such examination shall be paid by Beam.

ARTICLE 5
INTELLECTUAL PROPERTY

5.1 Patent Prosecution. As between the Parties, Editas shall be responsible, at its expense, and shall have the exclusive right, but not the obligation, for preparing, filing, Prosecuting and Maintaining the Subject Patents and for conducting any opposition, reexamination request, nullity action, interference, or other attack upon the validity, title or enforceability thereof. Without limiting the foregoing, Editas shall use Commercially Reasonable Efforts to secure the right to (x) provide Beam with a copy of each submission made to and material document received from a patent authority, court or other tribunal regarding Licensed Patents labelled as "Harvard/Liu" Patents on Exhibit B reasonably promptly after making such filing or receiving such material document, including a copy of each application as filed together with notice of its filing date and application number; (y) keep Beam advised of the status of all material communications, actual and prospective filings or submissions regarding such "Harvard/Liu" Patents, and shall give Beam copies of any such material communications, filings and submissions proposed to be sent to any patent authority or judicial body; and (z) consider in good faith and reasonably incorporate Beam's comments on material communications, filings and submissions for such "Harvard/Liu" Patents.

5.2 Infringement by Third Parties.

5.2.1 Beam shall promptly notify Editas of any knowledge it acquires of any actual or potential infringement of the Subject Patents by a Third Party. Editas shall promptly notify Beam of any knowledge it acquires of any actual or potential infringement of the Licensed Patents by a Competitive Product of a Third Party.

5.2.2 If any Licensed Patent labelled as a "Harvard/Liu" Patent on Exhibit B is infringed by the manufacture, use, offer for sale, sale or importation of a Competitive Product by a Third Party in any country in the Territory, then Beam shall have the primary right, but not the obligation, to institute, prosecute, and control any action or proceeding with respect to such infringement of such patent (an "Infringement Action"), by counsel of its own choice, provided that prior to initiating any such action, Beam shall notify Editas and shall provide evidence to Editas that there is a good faith basis for such action and provided further, that (a) to the extent the Infringement Action implicates an Institutional Patent, Beam's rights under this **Section 5.2.2** shall be at all times subject to the applicable Institutional In-License with respect to an Infringement Action and (b) Beam shall fully cooperate with Editas's reasonable requests for information or other assistance to enable Editas to comply with its obligations under the applicable Institutional In-License with respect to such Infringement Action.

5.2.3 If any Licensed Patent other than a "Harvard/Liu" Patent that is licensed by Editas under an Institutional In-License is infringed by the manufacture, use, offer for sale, sale or importation of a Competitive Product by a Third Party in any country in the Territory, then Editas shall consider in good faith, but shall not be required to grant, any reasonable request by Beam to enforce such Licensed Patent.

5.2.4 If any Editas-Owned Patent is infringed by the manufacture, use, offer for sale, sale or importation of a Competitive Product by a Third Party in any country in the Territory, then any enforcement of such License Patent shall be subject to Editas's approval, which Editas may withhold in its sole and absolute discretion.

5.2.5 Notwithstanding anything to the contrary contained herein with respect to any Infringement Action, if Beam owns one or more Patents that cover the Competitive Product ("Other IP"), Beam shall not initiate action under a Licensed Patent unless it (x) also asserts all or a portion of such Other IP or (y) obtains written consent from Editas (which consent, in the case of Institutional Patents, shall be predicated on the consent of the applicable Institution if so required by the applicable Institutional In-License). Beam shall use the same degree of diligence in prosecuting such Infringement Action as it uses or would use in prosecuting infringement of its own Patents.

5.2.6 If in any such Infringement Action brought by Beam as permitted by this **Section 5.2**, Editas is required to join for standing purposes or in order for Beam to commence or continue any such Infringement Action, then Editas shall join such Infringement Action, at Beam's expense, and shall be represented in such Infringement Action by counsel of Editas's choice. To the extent Editas has the right under the applicable Institutional In-License, Editas shall cause the applicable Institution to join any such Infringement Action brought by Beam as permitted by this **Section 5.2**, where required for standing purposes. The exercise by Beam of the right to bring an Infringement Action shall be subject to and consistent with the terms of all applicable Institutional In-Licenses; provided that, if, under the terms of an applicable Institutional In-License, Editas has an applicable enforcement right as to an Infringement Action that Beam would be permitted to bring by this **Section 5.2** that Editas cannot delegate to Beam, then, at Beam's request and expense, Editas shall exercise such rights in such Infringement Action as directed by Beam. If Beam does not take action in the prosecution, prevention, or termination of any infringement that Beam is permitted to bring pursuant to this **Section 5.2**, and has not commenced negotiations with the suspected infringer for the discontinuance of said infringement, within [**] days after receipt of notice of the existence of an infringement (or in cases where there is a relevant statutory period during which an Infringement Action must be commenced that would expire prior to the expiration of such [**]-day period and of which Editas has notified Beam promptly after it becomes aware, [**] days prior to the expiration of such relevant statutory period), Editas and Beam shall meet and discuss Beam's reasons for not initiating a lawsuit or otherwise making or prosecuting an Infringement Action. If after having given due consideration to Beam's reasons for not bringing such Infringement Action, Editas (or an Institution) desires to initiate a lawsuit or otherwise make or prosecute a claim of infringement with respect to the Competitive Product, Editas shall so notify Beam and Editas (or an Institution) may thereafter institute, prosecute, and control such action. If in any such Infringement Action Beam is required to join for standing purposes or in order for Editas (or an Institution) to commence or continue any such Infringement Action, then Beam shall join such Infringement Action, at Editas's (or Institution's), as applicable) expense, and shall be represented in such Infringement Action by counsel of Beam's choice.

5.2.7 Subject to this **Section 5.2.7**, the Party prosecuting the Infringement Action shall bear all costs and expenses, including attorneys' fees, related to such Infringement Action except for those costs and expenses incurred by the non-prosecuting Party or other Person other than at the prosecuting Party's request, and shall have the sole and exclusive right to elect counsel for such Infringement Action initiated by it pursuant to **Section 5.2.2**; provided that such

counsel is reasonably acceptable to the other Party. The other Party (and/or an Institution) shall have the right to participate in and be represented by counsel of its own selection and at its own expense in any suit instituted under **Section 5.2.2** by the other Party for infringement. Each Party agrees to reasonably cooperate (at the prosecuting Party's request and expense) in any action under **Section 5.2.2** that is prosecuted by the other Party, including executing legal papers and cooperating in the prosecution as may be reasonably requested by the prosecuting Party.

5.2.8 Unless otherwise agreed by the Parties in writing, the amount of any recovery from a proceeding brought under **Section 5.2.2** shall first be applied to the out-of-pocket costs of such action incurred by the Party, if any, prosecuting the applicable action, then to the out-of-pocket costs, if any, of the other Party and the Institutions reasonably incurred at the prosecuting Party's request in accordance with this **Section 5.2**, and (a) if the prosecuting Party is Beam, its Affiliates or its sublicensees (or Editas as directed by Beam pursuant to **Section 5.2.2**), any remaining recovery amount shall be treated as Net Sales of the Licensed Product affected by the infringing Competitive Product and Beam shall pay royalties thereon in accordance with **Section 4.7** or (b) if the prosecuting party is Editas or an Institution, any remaining recovery amount shall be allocated first to the Institution pursuant to the applicable Institutional In-License and then [**] percent ([**]%) of the remaining amount shall be allocated to Beam and [**] percent ([**]%) to Editas. If in connection with an Infringement Action brought under **Section 5.2.2**, an Institution is entitled under the applicable Institutional In-License to a portion of any recovery that is greater than the portion of the recovery payable, after costs, to Editas, the Parties will meet and agree in good faith on an alternative sharing of such recovery to that set forth in the immediately preceding sentence that takes into account the amounts payable to the applicable Institutions and results in a consistent allocation of the amounts remaining to Beam and Editas after payment of such amounts to the applicable Institutions.

5.3 Patent Challenge.

5.3.1 Beam shall comply with Section 4.5.3 of the Cas9-I Agreement, Section 4.5.3 of the Cas9-II Agreement, Section 4.4.3 of the Cpf1 Agreement, Section 10.5 of the 2014 MGH Agreement and Section 10.5 of the 2016 MGH Agreement (in each case, to the extent the Patents licensed under such Institutional In-License(s) are Licensed Patents hereunder) and acknowledges that any breach by Beam or its Affiliates or sublicensees of such provisions shall entitle the applicable Institution to certain remedies which if enforced by such Institution shall be passed through to Beam with respect to the Patents licensed under such Existing In-Licenses.

5.3.2 For any Patent Challenge with respect to a Patent that is not subject to **Section 5.3.1**, in the event that Beam or any of its Affiliates, brings, assumes or participates in or knowingly, willfully or recklessly assists in bringing a Patent Challenge (except if Beam is required to participate in such Patent Challenge pursuant to a subpoena or court order or participates in a proceeding that is initiated by a patent office and not at the instigation of Beam), then (a) Beam shall provide Editas with at least [**] days' notice prior to taking any such action and (b) Beam shall pay all reasonable costs, fees and expenses associated with such Patent Challenge that are incurred by Editas, either directly or under the terms of any Institutional In-License, within [**] days after receiving an invoice from Editas for same; (c) if any fees, royalties, milestones or revenues payable under the Institutional In-Licenses increase in amount

as a result of such Patent Challenge, Beam agrees to indemnify and hold harmless Editas from any and all such amounts; and (d) at any time after the Patent Challenge is brought, Editas may, at its option, terminate this Agreement according to **Section 9.4**; provided that if any of subsections (a) through (d) are held invalid or unenforceable for any reason, such invalidity or unenforceability shall not affect any of the other said subsections. Notwithstanding any provision of this Agreement to the contrary, Beam shall not have the right to assume or participate in the defense, settlement or other disposition of such Patent Challenge through its status as licensee under this Agreement, but shall pay all associated costs, fees and expenses as provided in this **Section 5.3.2**. The Parties agree that any challenge or opposition to a Patent Right by Beam may be detrimental to Editas, and that the above provisions shall constitute reasonable liquidated damages to reasonably compensate Editas for any loss it may incur as a result of Beam taking such action.

ARTICLE 6
CONFIDENTIALITY

6.1 Confidentiality; Exceptions. Except to the extent expressly authorized by this Agreement or otherwise agreed in writing, the Parties agree that the receiving Party (the "Receiving Party") shall keep confidential and shall not publish or otherwise disclose or use for any purpose other than as provided for in this Agreement any confidential and proprietary information and materials, patentable or otherwise, in any form (written, oral, photographic, electronic, magnetic, or otherwise) which is disclosed to it by the other Party (the "Disclosing Party") or otherwise received or accessed by a Receiving Party in the course of performing its obligations or exercising its rights under this Agreement, including trade secrets, know-how, inventions or discoveries, proprietary information, formulae, processes, techniques and information relating to a Party's past, present and future marketing, financial, and Development activities of any product or potential product or useful technology of the Disclosing Party and the pricing thereof (collectively, "Confidential Information"), except to the extent that it can be established by the Receiving Party that such Confidential Information:

6.1.1 was in the lawful knowledge and possession of the Receiving Party prior to the time it was disclosed to, or learned by, the Receiving Party, or was otherwise developed independently by the Receiving Party, as evidenced by written records kept in the ordinary course of business, or other documentary proof of actual use by the Receiving Party;

6.1.2 was generally available to the public or otherwise part of the public domain at the time of its disclosure to the Receiving Party;

6.1.3 became generally available to the public or otherwise part of the public domain after its disclosure and other than through any act or omission of the Receiving Party in breach of this Agreement; or

6.1.4 was disclosed to the Receiving Party, other than under an obligation of confidentiality, by a Third Party who had no obligation to the Disclosing Party not to disclose such information to others.

6.2 Authorized Disclosure. Except as expressly provided otherwise in this Agreement, a Receiving Party may use and disclose Confidential Information of the Disclosing Party as follows: (a) under appropriate confidentiality provisions similar to those in this Agreement, in connection with the performance of its obligations or exercise of rights granted or reserved in this Agreement (including the rights to Develop and Commercialize Licensed Products and to grant sublicenses as permitted hereunder); or (b) to the extent such disclosure is reasonably necessary in filing or prosecuting patent, copyright and trademark applications, prosecuting or defending litigation, complying with applicable governmental regulations, seeking and obtaining Regulatory Approval, conducting non-clinical activities or clinical trials, preparing and submitting INDs to Regulatory Authorities, or is otherwise required by Law or the rules of a recognized stock exchange or automated quotation system applicable to such Party; provided, however, that if a Receiving Party is required by Law to make any such disclosure of a Disclosing Party's Confidential Information it will, except where impracticable, give reasonable advance notice to the Disclosing Party of such disclosure requirement and, if requested by the Disclosing Party, cooperate with the Disclosing Party to secure confidential treatment of such Confidential Information required to be disclosed; or (c) in communication with existing or prospective investors, consultants, advisors, licensees or collaborators or others on a need to know basis, in each case under appropriate confidentiality provisions substantially equivalent to those of this Agreement; or (d) to the extent mutually agreed to in writing by the Parties.

6.3 Publications. Beam and its Affiliates shall have the right to publish or publicly disclose the results generated in the course of performing any research related to the rights it licenses from Editas hereunder, provided that Beam submits the proposed publication or disclosure to Editas for its review at least [**] days prior to the scheduled submission of such proposed publication or public disclosure (including to any journal for review); provided that the review period shall be [**] days prior to presentation or disclosure for posters and abstracts. If, during the applicable review period Editas notifies Beam that such publication or public disclosure contains the Confidential Information of Editas, Beam will remove any such Confidential Information prior to submission. For clarity, Editas shall not have any right, and shall not grant to any other Person the right, to publish or publicly disclose any research results relating to a Licensed Product in the Field during the Term.

6.4 Press Releases; Disclosure of Agreement. The Parties shall reasonably cooperate and mutually agree on an initial press release to be made by Beam regarding the execution of this Agreement. Neither Party shall issue or cause the publication of any other press release or public announcement regarding the terms of this Agreement without the express prior approval of the other Party other than as required by Law or the rules of any stock exchange, provided that if any such publication, press release or public announcement is required by Law, the Party obligated to make such publication, press release or public announcement shall, if practicable, notify the other Party in advance thereof and reasonably consider any timely comments from such other Party, including any reasonable request to limit such publication, press release or public announcement.

6.5 Use of Names. Neither Party shall use the name, symbol, trademark, trade name or logo of the other Party or its Affiliates in any press release, publication or other form of public disclosure without the prior written consent of the other Party in each, except for those disclosures for which consent has already been obtained. In addition, Beam shall not, use or

register the name “The Broad Institute, Inc.,” “Wyss Institute for Biologically Inspired Engineering at Harvard University,” “President and Fellows of Harvard College,” “Massachusetts Institute of Technology,” “The Rockefeller University,” “University of Tokyo,” “TODAI TLO, Ltd.,” “Wageningen University,” “Wageningen University & Research,” “University of Iowa Research Foundation,” “University of Iowa,” “The General Hospital Corporation,” “Massachusetts General Hospital,” “MGH” or any variation, adaptation, or abbreviation thereof (alone or as part of another name) or any logos, seals, insignia or other words, names, symbols or devices that identify such Persons or any of such Persons’ schools, units, divisions or affiliates or any trustee, director, officer, staff member, employee, student or other agent of such Person (“Institution Names”) for any purpose except with the prior written approval of, and in accordance with restrictions required by, such Person. Without limiting the foregoing, Beam shall cease all use of Institution Names as permitted under or in connection with this Agreement on the termination or expiration of this Agreement except as otherwise approved in writing by the applicable Institution or MIT, as applicable. Beam shall not use or register the name “Howard Hughes Medical Institute” or any variation, adaptation, or abbreviation thereof (alone or as part of another name) or any logos, seals, insignia or other words, names, symbols or devices that identify HHMI or any unit of HHMI (“HHMI Names”) or of any HHMI employee (including Dr. David Liu and Dr. Luciano Marraffini) in a manner that reasonably could constitute an endorsement of a commercial product or service; but that use for other purposes, even if commercially motivated, is permitted provided that (1) the use is limited to accurately reporting factual events or occurrences, and (2) any reference to an HHMI Name or any HHMI employees (including Dr. David Liu and Dr. Luciano Marraffini) in press releases or similar materials intended for public release is approved by HHMI in advance.

6.6 Termination of Prior Agreement. This Agreement supersedes and replaces the Confidentiality Agreement by and between the Parties dated as of June 28, 2017 (the “Existing Confidentiality Agreement”). All information exchanged between the Parties under the Existing Confidentiality Agreement shall be deemed Confidential Information of the respective Disclosing Party hereunder and shall be subject to the terms of this **ARTICLE 6**.

6.7 Remedies. Each Party shall be entitled to seek, in addition to any other right or remedy it may have, at Law or in equity, a temporary injunction, without the posting of any bond or other security, enjoining or restraining the other Party from any violation or threatened violation of this **ARTICLE 6**.

ARTICLE 7
REPRESENTATIONS, WARRANTIES AND COVENANTS

7.1 Representations and Warranties of Both Parties. Each Party hereby represents and warrants to the other Party, as of the Effective Date, that:

7.1.1 such Party is duly organized, validly existing and in good standing under the Laws of the jurisdiction of its incorporation and has full corporate power and authority to enter into this Agreement and to carry out the provisions hereof;

7.1.2 such Party has taken all necessary action on its part to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder;

7.1.3 this Agreement has been duly executed and delivered on behalf of such Party, and constitutes a legal, valid, binding obligation, enforceable against it in accordance with the terms hereof;

7.1.4 the execution, delivery and performance of this Agreement by such Party does not conflict with any agreement or any provision thereof, or any instrument or understanding, oral or written, to which it is a party or by which it is bound, nor violate any law or regulation of any court, governmental body or administrative or other agency having jurisdiction over such Party; and

7.1.5 no Governmental Authorization, consent, approval, license, exemption of or filing or registration with any court or governmental department, commission, board, bureau, agency or instrumentality, domestic or foreign, under any applicable Laws currently in effect, is or will be necessary for, or in connection with, the transactions contemplated by this Agreement or any other agreement or instrument executed in connection herewith, or for the performance by it of its obligations under this Agreement and such other agreements except as may be required to conduct clinical trials or to seek or obtain Regulatory Approvals.

7.2 Representations and Warranties of Editas. Editas hereby represents and warrants to Beam, as of the Effective Date except in the case of **Section 7.2.5** which is as of the date of Editas's Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on or about May 4, 2018 ("**Form 10-Q**"), that, except as Editas has disclosed to Beam in **Schedule 7.2** or the Form 10-Q:

7.2.1 Editas is the sole and exclusive owner of, or has Control via a license from the Institutions to, the Subject Patents;

7.2.2 Editas has the right to grant all rights and licenses it purports to grant to Beam under this Agreement;

7.2.3 Editas has not granted any right or license to any Third Party relating to any of the Subject Patents that conflicts or interferes with any of the rights or licenses granted hereunder with respect to the Subject Patents;

7.2.4 To its knowledge, the Subject Patents are valid and enforceable and Editas has complied (and, to its knowledge, the Institutions have complied) with all Laws and duties of candor with respect to the filing, prosecution and maintenance of the Subject Patents. Editas has paid (with respect to Subject Patents for which it is responsible for prosecution and maintenance) and, to Editas's knowledge, the Institutions have paid (with respect to Subject Patents for which Institutions are responsible for prosecution and maintenance) all maintenance and annuity fees with respect to the Subject Patents due as of the Effective Date. Except as identified in **Schedule 7.2**, no action or proceeding regarding inventorship of a Subject Patent has been brought or threatened in writing;

7.2.5 It has not received written notice of any claims, and there are no judgments or settlements against or owed by Editas, or to the knowledge of Editas, any pending or threatened claims or litigation, in each case relating to the Subject Patents; and

7.2.6 Editas has provided to Beam true and correct partially-redacted copies of all Institutional In-Licenses in their current form, which Institutional In-Licenses are in full force and effect; Editas is not in material breach and, to its knowledge, none of the Institutions are in material breach of the Institutional In-Licenses, and Editas has not received any notice of breach of the Institutional In-Licenses. None of the redactions made to the Institutional In-Licenses provided to Beam by Editas contain provisions that would be reasonably considered material to Beam's assessment of the transaction underlying this Agreement or the terms of this Agreement.

7.3 Additional Covenants. Editas agrees that, during the Term:

7.3.1 Editas will, and will cause its Affiliates to, (i) not enter into or amend any agreement with any Third Party, including the Institutions, which amendment or agreement materially adversely affects the rights granted to Beam hereunder or Editas's ability to fully perform its obligations hereunder; and (ii) promptly furnish Beam with copies of all amendments to the Institutional In-Licenses executed following the Effective Date that directly relate to (A) the rights granted to Beam under this Agreement and (B) the Field (which, in each case, Editas may redact as necessary to protect confidential or commercially sensitive information); provided that, nothing in this **Section 7.3.1** shall restrict Editas's ability to amend, waive any right under or terminate any Institutional In-License; and

7.3.2 Editas shall promptly notify Beam in the event of the termination of any Institutional In-License and shall use Commercially Reasonable Efforts to assist Beam in obtaining a direct license from the applicable Institution if available pursuant to, and in accordance with, the sublicense survival terms of such Institutional In-License.

7.4 Disclaimer. Except as otherwise expressly set forth in this Agreement, NEITHER PARTY MAKES ANY REPRESENTATION OR EXTENDS ANY WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY THAT ANY PATENTS ARE VALID OR ENFORCEABLE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. Without limiting the generality of the foregoing, except as otherwise expressly set forth in this Agreement, each Party disclaims any warranties with regards to: (a) the safety or usefulness for any purpose of the technology or materials it provides or discovers under this Agreement; or (b) the validity, enforceability, or non-infringement of any intellectual property rights or technology it provides or licenses to the other Party under this Agreement.

ARTICLE 8
INDEMNIFICATION; INSURANCE

8.1 Indemnification by Beam. Beam shall indemnify, defend and hold harmless:

8.1.1 Editas and its Affiliates, and its or their respective directors, officers, employees and agents, (each, an "Editas Indemnitee") from and against any and all liabilities, damages, losses, costs and expenses, including the reasonable fees of attorneys and other professional Third Parties (collectively, "Losses"), arising out of or resulting from any and all Third Party suits, claims, actions, proceedings or demands ("Claims") based upon:

a) the negligence, recklessness or wrongful intentional acts or omissions of any Beam or its Affiliates or its or their respective directors, officers, employees and agents in connection with Beam's performance of its obligations or exercise of its rights under this Agreement;

b) any breach of any representation or warranty or express covenant made by Beam under **ARTICLE 7** or any other provision under this Agreement;

c) failure by Beam to comply with any Law; or

d) any Development of a Licensed Product conducted by or on behalf of Beam, its Affiliates or sublicensees, and the manufacture and Commercialization by Beam, its Affiliates, licensees or sublicensees of any Licensed Product, including (i) any product liability, personal injury, property damage or other damage and (ii) the infringement of any patent or other intellectual property rights of any Third Party, in each case of clause (i) and (ii) resulting from any of the foregoing activities described in this **Section 8.1.1(d)**,

except, in each case of clauses (a) through (d) of this **Section 8.1.1**, to the extent any such Losses or Claims result from (x) the gross negligence or willful misconduct of an Editas Indemnitee or (y) from the breach of any representation or warranty or obligation under this Agreement by Editas or (z) are subject to indemnification by Editas under **Section 8.2**.

8.1.2 MGH and its Affiliates and their respective trustees, directors, officers, medical and professional staff, employees and agents, and their respective successors, heirs and assigns ("MGH Indemnitees") from and against any and all Losses, arising out of or resulting from any and all Actions (as defined in the 2016 MGH Agreement) relating to (a) product liability concerning any Licensed Product made, used, sold or performed by Beam, its Affiliate or sublicensee pursuant to any right or license sublicensed by Editas to Beam under the 2014 MGH or 2016 MGH Agreement, as applicable, or (b) the practice of any Patents and/or any right sublicensed by Editas to Beam under the 2014 MGH Agreement or 2016 MGH Agreement, as applicable, except, in each case of clause (a) and (b), to the extent such Action results directly from the gross negligence or willful misconduct of an MGH Indemnitee.

8.1.3 To the extent that Patents licensed under the Cas9-1 Agreement, Cas9-II Agreement or Cpf1 Agreement are Licensed Patents hereunder, HHMI, Harvard, Broad, MIT, UTokyo, Wageningen, Iowa, Rockefeller and each of their current and former directors, governing board members, trustees, officers, faculty, affiliated investigators, medical and professional staff, employees, students and agents, and their respective successors, heirs and assigns ("Institution Indemnitees"), as set forth in Section 9.1 of the Cas9-I Agreement, Section 9.1 of the Cas9-II Agreement and/or Section 9.1 of the Cpf1 Agreement, as applicable.

8.2 Indemnification by Editas. Editas shall indemnify, defend and hold harmless Beam and its Affiliates, and its or their respective directors, officers, employees and agents (each, and "Beam Indemnitee"), from and against any and all Losses, arising out of or resulting from any and all Claims based upon:

8.2.1 the negligence, recklessness or wrongful intentional acts or omissions of Editas or its Affiliates or its or their respective directors, officers, employees and agents, in connection with Editas's performance of its obligations or exercise of its rights under this Agreement;

8.2.2 any breach of any representation or warranty or express covenant made by Editas under **ARTICLE 7** or any other provision under this Agreement; or

8.2.3 failure by Editas to comply with any Law,

except, in each case of **Sections 8.2.1, 8.2.2** or **8.2.3**, to the extent any such Losses or Claims result from (x) the gross negligence or willful misconduct of a Beam Indemnitee or (y) from the breach of any representation or warranty or obligation under this Agreement by Beam or (z) are subject to indemnification by Beam under **Section 8.1**.

8.3 Procedure. A Person entitled to indemnification under this **ARTICLE 8** (an "Indemnified Party") shall give prompt written notification to the Person from whom indemnification is sought (the "Indemnifying Party") of the commencement of any action, suit or proceeding relating to a Third Party claim for which indemnification may be sought or, if earlier, upon the assertion of any such claim by a Third Party (it being understood and agreed, however, that the failure by an Indemnified Party to give notice of a Third Party claim as provided in this **Section 8.3** shall not relieve the Indemnifying Party of its indemnification obligation under this Agreement except and only to the extent that such Indemnifying Party is actually damaged as a result of such failure to give notice). Within [**] days after delivery of such notification, the Indemnifying Party may, upon written notice thereof to the Indemnified Party, assume control of the defense of such action, suit, proceeding or claim with counsel reasonably satisfactory to the Indemnified Party. If the Indemnifying Party does not assume control of such defense, the Indemnified Party shall control such defense and, without limiting the Indemnifying Party's indemnification obligations, the Indemnifying Party shall reimburse the Indemnified Party for all costs and expenses, including attorney fees, reasonably incurred by the Indemnified Party in defending itself within [**] days after receipt of any invoice therefor from the Indemnified Party. The Party not controlling such defense may participate therein at its own expense; provided that, if the Indemnifying Party assumes control of such defense and the Indemnified Party in good faith concludes, based on advice from counsel, that the Indemnifying Party and the Indemnified Party have conflicting interests with respect to such action, suit, proceeding or claim, the Indemnifying Party shall be responsible for the reasonable fees and expenses of one counsel to the Indemnified Party in connection therewith. The Party controlling such defense shall keep the other Party advised of the status of such action, suit, proceeding or claim and the defense thereof and shall consider recommendations made by the other Party with respect thereto. The Indemnified Party shall not agree to any settlement of such action, suit, proceeding or claim without the prior written consent of the Indemnifying Party, which shall not be unreasonably withheld, delayed or conditioned. The Indemnifying Party shall not agree to any settlement of such action, suit, proceeding or claim or consent to any judgment in respect thereof that does not include a complete and unconditional release of the Indemnified Party from all liability with respect thereto, that imposes any liability or obligation on the Indemnified Party or that acknowledges fault by the Indemnified Party without the prior written consent of the Indemnified Party.

8.4 Insurance. Beam shall maintain, at its cost, insurance against liability and other risks associated with its activities and obligations under this Agreement, including its indemnification obligations hereunder, in such amounts, subject to such deductibles and on such terms as are customary for the activities to be conducted by it under this Agreement and as are consistent with the requirements of the Institutional In-Licenses (to the extent the Patents licensed under such Institutional In-License(s) are Licensed Patents hereunder). Beam shall furnish to Editas evidence of such insurance upon request and add any additional insured as may be contemplated by the Institutional In-Licenses.

8.5 LIMITATION OF LIABILITY. EXCEPT FOR A BREACH OF **ARTICLE 6** OR FOR CLAIMS OF A THIRD PARTY THAT ARE SUBJECT TO INDEMNIFICATION UNDER THIS ARTICLE 8, NEITHER EDITAS NOR BEAM, NOR ANY OF THEIR RESPECTIVE AFFILIATES, LICENSEES OR SUBLICENSEES, WILL BE LIABLE TO THE OTHER PARTY TO THIS AGREEMENT, ITS AFFILIATES OR ANY OF THEIR LICENSEES OR SUBLICENSEES FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL OR PUNITIVE DAMAGES OR LOST PROFITS OR ROYALTIES, LOST DATA OR COST OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, WHETHER LIABILITY IS ASSERTED IN CONTRACT, TORT (INCLUDING NEGLIGENCE AND STRICT PRODUCT LIABILITY), INDEMNITY OR CONTRIBUTION, AND IRRESPECTIVE OF WHETHER THAT PARTY OR ANY REPRESENTATIVE OF THAT PARTY HAS BEEN ADVISED OF, OR OTHERWISE MIGHT HAVE ANTICIPATED THE POSSIBILITY OF, ANY SUCH LOSS OR DAMAGE.

ARTICLE 9
TERM AND TERMINATION

9.1 Term. This Agreement is effective as of the Effective Date and shall continue in full force and effect unless earlier terminated by a Party in accordance with **Section 9.2**, **9.3**, **9.4** or **9.5** and shall expire on a Licensed Product-by-Licensed Product and country-by-country basis upon the expiration of the Royalty Term with respect to such Licensed Product in such country.

9.2 Termination by Beam at Will. Beam shall have the right, at its sole discretion, exercisable at any time during the Term, to terminate this Agreement [**], upon [**] days' prior written notice to Editas.

9.3 Termination for Material Breach. Either Party (the "Non-Breaching Party") may, without prejudice to any other remedies available to it under applicable Law or in equity, terminate this Agreement if the other Party (the "Breaching Party") shall have materially breached or defaulted in the performance of its obligations hereunder, and such default shall have continued for [**] days (or, in the case of a payment breach by Beam, [**] days) after written notice thereof was provided to the Breaching Party by the Non-Breaching Party, such notice describing the alleged breach. Any such termination of this Agreement under this **Section 9.3** shall become effective at the end of such [**]-day or [**]-day (as applicable) cure

period, unless the Breaching Party has cured such breach or default prior to the expiration of such cure period, or if such breach is not susceptible to cure within such cure period even with the use of Commercially Reasonable Efforts, the Non-Breaching Party's right to termination [**]; provided that in no event shall such extension of the Breaching Party's right to cure extend beyond [**] days after the expiration of the original cure period. The right of either Party to terminate this Agreement as provided in this **Section 9.3** shall not be affected in any way by such Party's waiver or failure to take action with respect to any previous default.

9.4 Termination for Patent Challenge by Beam. In the event of a Patent Challenge by Beam or any of its Affiliates or sublicensees, then Editas shall be entitled to terminate this Agreement in its entirety immediately upon written notice to Beam. Notwithstanding the foregoing, if a sublicensee of Beam initiates a Patent Challenge and the Institution licensor(s) of the Subject Patent(s) subject to such Patent Challenge has agreed or agrees that Beam, as Editas's sublicensee under this Agreement, can terminate its sublicense with such sublicensee within a certain period of time and thereafter not be subject to termination of this Agreement with respect to such Subject Patent(s) as a result of the relevant Patent Challenge, then Editas will not have the right to terminate this Agreement pursuant to this **Section 9.4** on account of a Patent Challenge by such Beam sublicensee if Beam terminates its sublicense with such sublicensee within such time period. For the avoidance of doubt, any participation by Beam, any of its Affiliates or sublicensees or its or their employees in any claim, challenge or proceeding that Beam, such Affiliates or sublicensees or such employees are required to participate in pursuant to a subpoena or court order or participates in a proceeding that is initiated by a patent office and not at the instigation of Beam, such Affiliates or sublicensees or such employees shall not constitute a Patent Challenge under this **Section 9.4** and shall not give rise to Editas's right to terminate any license hereunder.

9.5 Bankruptcy. Either Party may terminate the Agreement if the other Party makes a voluntary or involuntary general assignment of its assets for the benefit of creditors, a petition in bankruptcy is filed by or against the other Party and is not dismissed in [**] days, or a receiver or trustee is appointed for all or any part of the other Party's property.

9.6 Consequences of Termination.

9.6.1 Accrued Obligations. Expiration or termination of this Agreement for any reason shall not release any Party of any obligation or liability which, at the time of such expiration or termination, has already accrued or which is attributable to a period prior to such expiration or termination.

9.6.2 Termination of Rights.

a) Upon termination of this Agreement in its entirety, all rights and licenses granted by Editas to Beam hereunder (including the right to exercise Options and obtain such licenses) shall immediately terminate; provided that any sublicense by Beam under any sublicense or license granted by Editas to Beam under this Agreement will, at the sublicensee's written election delivered to Editas within [**] days of Beam being provided with written notice or having knowledge of such termination, and to the extent

permitted under the Institutional In-Licenses, survive such termination on the condition that (i) the relevant sublicensee is not, at the time of such termination, in material breach of any of its obligations under such sublicense and (ii) all amounts owed, as of the date of termination of this Agreement, by Beam to Editas or the Institutions hereunder have been paid in full. In order to effect this provision, at the request of the sublicensee, Editas shall use Commercially Reasonable Efforts, in good faith, to enter into a direct license with the sublicensee on substantially the same terms as the sublicense to the extent such terms relate to the sublicensed technology; provided that (1) the financial terms of such direct license will be the same terms as set forth in this Agreement with respect to the sublicensed technology (including with respect to Institutional In-License costs pursuant to **Section 4.6),** (2) the applicable sublicensee shall pay all amounts that, but for the termination of this Agreement, would have become payable by Beam or such sublicensee to Editas or the Institutions pursuant to this Agreement prior to the date upon which Editas and such sublicensee enter into such direct license; provided that, in the event that more than one sublicense had been granted by Beam prior to the date of such termination and more than one such sublicensee has elected to enter into a direct license with Editas pursuant to this **Section 9.6.2(a)**, then the total amount payable to Editas pursuant to this clause (2) shall be appropriately allocated among such sublicensees so that Editas does not receive from such sublicensees an aggregate amount that is more than the amount owed to it by Beam pursuant to this Agreement prior to such termination, (3) Editas will not be required to undertake obligations in addition to those required by this Agreement and (4) Editas's rights under such direct license will be consistent with its rights under this Agreement, taking into account the scope of the license granted under such direct license, provided, further, that in no case shall Editas be required to negotiate with such sublicensee for a direct license for more than [**] days from the date of the sublicensee's notice of its intent to enter into a direct license.

b) Upon termination of this Agreement with respect to a Family of Patents under **Section 9.2**, all Patents within such Family shall no longer be deemed Licensed Patents or Subject Patents hereunder as of the effective date of such partial termination, provided that any sublicense by Beam with respect to such Family under any sublicense or license granted by Editas to Beam under this Agreement, at the sublicensee's written election delivered to Editas within [**] days of Beam being provided with written notice or having such knowledge of such termination, and to the extent permitted under the Institutional In-Licenses, survive such partial termination on the condition that (i) the relevant sublicensee is not, at the time of such partial termination, in material breach of any of its obligations under such sublicense and (ii) all amounts owed with respect to such Family, as of the date of such partial termination, by Beam to Editas and/or the Institutions hereunder have been paid in full. In order to effect this provision, at the

request of the sublicensee, Editas shall use Commercially Reasonable Efforts, in good faith, to enter into a direct license with the sublicensee on substantially the same terms as the sublicense to the extent such terms relate to the sublicensed technology; provided that (1) the financial terms of such direct license will be the same terms as set forth in this Agreement with respect to the sublicensed technology (including with respect to Institutional In-License costs pursuant to **Section 4.6**), (2) the applicable sublicensee shall pay all amounts that, but for the partial termination of this Agreement, would have become payable by Beam or such sublicensee with respect to the applicable Family to Editas or the Institutions pursuant to this Agreement prior to the date upon which Editas and such sublicensee enter into such direct license; provided that, in the event that more than one sublicense had been granted by Beam prior to the date of such termination and more than one such sublicensee has elected to enter into a direct license with Editas pursuant to this **Section 9.6.2(b)**, then the total amount payable to Editas pursuant to this clause (2) shall be appropriately allocated among such sublicensees so that Editas does not receive from such sublicensees an aggregate amount that is more than the amount owed to it by Beam pursuant to this Agreement prior to such termination, (3) Editas will not be required to undertake obligations in addition to those required by this Agreement, and (4) Editas's rights under such direct license will be consistent with its rights under this Agreement, taking into account the scope of the license granted under such direct license, provided, further, that in no case shall Editas be required to negotiate with such sublicensee for a direct license for more than [**] days from the date of the sublicensee's notice of its intent to enter into a direct license.

9.7 Beam Option to Continue In Lieu of Termination. If Beam has the right to terminate this Agreement under **Section 9.3**, but does not desire to exercise such right, Beam may elect to exercise its rights under this **Section 9.7** in lieu of exercising its right to terminate the Agreement under **Section 9.3** by providing written notice of such election to Editas prior to the date that otherwise would have been the effective date of termination had Beam exercised its right under **Section 9.3** to terminate this Agreement; provided that (a) Beam has provided notice to Editas asserting the alleged breach as required by **Section 9.3**, (b) Editas fails to cure such breach prior to the applicable cure period and (c) Editas has not notified Beam that it (i) disputes that it is in material breach or (ii) contends that it cured such material breach within the applicable cure period. In the event of such an election, the Agreement shall continue in full force and effect except that (x) the [**] percent ([**]%) royalty due under **Section 4.7(a)** with respect to Net Sales of a Licensed Product not Covered by an Editas-Owned Patent in addition to the Institutional Royalty Rate shall be reduced from [**] percent ([**]%) to [**] percent ([**]%) of Net Sales and (y) the [**] percent ([**]%) or [**] percent ([**]%) royalty due under **Section 4.7(b)** with respect to Net Sales of a Licensed Product Covered by an Editas-Owned Patent shall be reduced by [**] percent ([**]%) of the royalty otherwise due under **Section 4.7(b).** If Beam elects to exercise its rights under this **Section 9.7** in lieu of exercising its right to terminate the Agreement under **Section 9.3**, the remedy set forth in this **Section 9.7** shall be Beam's sole and exclusive remedy and Editas's sole and exclusive obligation with respect to any material breach giving rise to Beam's right to terminate this Agreement under **Section 9.3**. For clarity, if Beam has the right to terminate this Agreement under **Section 9.3** and does not elect to exercise its rights under this **Section 9.7**, then, whether or not Beam terminates this Agreement, Beam may exercise any other remedies available to it under this Agreement, at Law or in equity.

9.8 Non-Exclusive Remedy. Termination of this Agreement by a Party shall be without prejudice to other remedies such Party may have at law or equity.

9.9 Survival. In addition to this **Section 9.9**, the following provisions (including any definitions necessary for the interpretation thereof) shall survive expiration or termination of this Agreement and continue to be enforceable: **Section 4.2**, **Section 4.8** (solely with respect to accrued but unpaid amounts as of the effective date of termination and reports with respect thereto), **Section 4.11** (solely with respect to accrued but unpaid amounts as of the effective date of termination), **Section 4.12**, **Section 9.6**, **Section 9.8**, **ARTICLE 6**, **ARTICLE 8** and **ARTICLE 10**.

ARTICLE 10
MISCELLANEOUS

10.1 Intended Third Party Beneficiaries.

10.1.1 Beam acknowledges and agrees that for so long as any Licensed Patents are licensed by Editas from Institutions (as defined in the Cas9-I License, Cas9-II License or Cpf1 License, as applicable) or any of the Optioned Patents that are still subject to an Option are licensed by Editas from the Institutions:

a) solely with respect to the Cas9-I License, Harvard and Broad are intended third party beneficiaries of this Agreement for the purpose of enforcing all patent challenge, indemnification, and insurance provisions of this Agreement and enforcing the right to terminate this Agreement for breach of the patent challenge, indemnification and insurance provisions of this Agreement; and HHMI, MIT and Rockefeller are intended third party beneficiaries of this Agreement for the purpose of enforcing HHMI's and MIT's respective rights, including indemnification and insurance provisions, under the Cas9-I License;

b) solely with respect to the Cas9-II License, Broad is an intended third party beneficiary of this Agreement for the purpose of enforcing all patent challenge, indemnification, and insurance provisions of this Agreement and enforcing the right to terminate this Agreement for breach of the patent challenge, indemnification and insurance provisions of this Agreement; and Broad, Harvard, MIT and Iowa are intended third party beneficiaries of this Agreement for the purpose of enforcing Broad's, Harvard's, MIT's and Iowa's respective rights, including indemnification and insurance provisions, under the Cas9-II License; and

c) solely with respect to the Cpf1 License, Broad is an intended third party beneficiary of this Agreement for the purpose of enforcing all patent challenge, indemnification, and insurance provisions of this Agreement and enforcing the right to terminate this Agreement for breach of the patent challenge, indemnification and insurance provisions of this Agreement; and Broad, Harvard, MIT, UTokyo and Wageningen are intended third party beneficiaries of this Agreement for the purpose of enforcing Broad's, Harvard's, MIT's, UTokyo's and Wageningen's respective rights, including indemnification and insurance provisions, under the Cpf1 License.

10.1.2 Beam acknowledges and agrees that for so long as any Licensed Patents are licensed by Editas from MGH or any of the Optioned Patents that are still subject to an Option are licensed by Editas from MGH, and solely with respect to the 2014 MGH Agreement and the 2016 MGH Agreement, MGH is an intended third party beneficiary of this Agreement for the purpose of enforcing all patent challenge, indemnification, and insurance provisions of this Agreement.

10.2 Dispute Resolution. If a dispute between the Parties arises under this Agreement, either Party shall have the right to refer such dispute in writing to the respective Executive Officers, and such Executive Officers shall attempt in good faith to resolve such dispute. If the Parties are unable to resolve a given dispute pursuant to this **Section 10.2** within [**] days after referring such dispute to the Executive Officers, either Party may have the given dispute settled by binding arbitration pursuant to **Section 10.3**.

10.3 Arbitration Request. If a Party intends to begin an arbitration to resolve a dispute arising under this Agreement, such Party shall provide written notice (the "Arbitration Request") to the other Party of such intention and a statement of the issues for resolution. From the date of the Arbitration Request and until such time as the dispute has become finally settled, the running of the time periods as to which Party must cure a breach of this Agreement becomes suspended as to any breach that is the subject matter of the dispute.

10.3.1 Additional Issues. Within [**] days after the receipt of the Arbitration Request, the other Party may, by written notice, add additional issues for resolution in a statement of counter-issues.

10.3.2 No Arbitration of Patent Issues. Any dispute, controversy or claim under this Agreement relating to the scope, validity, enforceability or infringement of any Patent Covering the manufacture, use, importation, offer for sale or sale of Licensed Products shall be submitted to a court of competent jurisdiction in the country in which such Patent was granted or arose.

10.3.3 Arbitration Procedure. Any arbitration pursuant to this **ARTICLE 10** will be held in Boston, MA, United States unless another location is mutually agreed by the Parties. The arbitration will be governed by the United States Arbitration Act, 9 U.S.C. §§ 1-16, to the exclusion of any inconsistent state Law. The Parties shall mutually agree on the rules to govern discovery and the rules of evidence for the arbitration within [**] days after the Arbitration Request. If the Parties fail to timely agree to such rules, the United States Federal Rules of Civil Procedure will govern discovery and the United States Federal Rules of Evidence will govern evidence for the arbitration. The arbitration will be conducted by a single arbitrator knowledgeable in the subject matter at issue in the dispute and acceptable to both Parties; provided that, the Parties may by mutual agreement elect to have the arbitration conducted by a panel of three (3) arbitrators. If the Parties fail to agree on a mutually acceptable arbitrator within [**] days after the Arbitration Request, then the arbitrator shall be selected by the Boston,

MA office of the AAA. The arbitrator may proceed to an award, notwithstanding the failure of either Party to participate in the proceedings. The arbitrator shall, within [**] days after the conclusion of the arbitration hearing, issue a written award and statement of decision describing the essential findings and conclusions on which the award is based, including the calculation of any damages awarded. The arbitrator shall be limited in the scope of his or her authority to resolving only the specific matter which the Parties have referred to arbitration for resolution and shall not have authority to render any decision or award on any other issues. Subject to **Section 8.5**, the arbitrator shall be authorized to award compensatory damages, but shall not be authorized to award punitive, special, consequential, or any other similar form of damages, or to reform, modify or materially change this Agreement. The arbitrator also shall be authorized to grant any temporary, preliminary or permanent equitable remedy or relief the arbitrator deems just and equitable and within the scope of this Agreement, including an injunction or order for specific performance. The award of the arbitrator shall be the sole and exclusive remedy of the Parties, except for those remedies that are set forth in this Agreement or which apply to a Party by operation of the applicable provisions of this Agreement, and the Parties hereby expressly agree to waive the right to appeal from the decisions of the arbitrator, and there shall be no appeal to any court or other authority (government or private) from the decision of the arbitrator. Judgment on the award rendered by the arbitrator may be enforced in any court having competent jurisdiction thereof.

10.3.4 Costs. Each Party shall bear its own attorneys' fees, costs, and disbursements arising out of the arbitration, and shall pay an equal share of the fees and costs of the arbitrator; provided, however, that the arbitrator, in his or her award, shall be authorized to determine whether a Party is the prevailing Party, and if so, to award to that prevailing Party reimbursement for its reasonable attorneys' fees, costs and disbursements (including, for example, expert witness fees and expenses, transcripts, photocopy charges and travel expenses).

10.3.5 Preliminary Injunctions. Notwithstanding anything in this Agreement to the contrary, a Party may seek a temporary restraining order or a preliminary injunction from any court of competent jurisdiction in order to prevent immediate and irreparable injury, loss, or damage on a provisional basis, pending the award of the arbitrator on the ultimate merits of any dispute.

10.3.6 Confidentiality. All proceedings and decisions of the arbitrator shall be deemed Confidential Information of each of the Parties, and shall be subject to **ARTICLE 6**.

10.4 Governing Law. This Agreement and any dispute arising from the performance or breach hereof shall be governed by and construed and enforced in accordance with the Laws of the Commonwealth of Massachusetts without reference to conflicts of laws principles; provided that with respect to matters involving the enforcement of intellectual property rights, the Laws of the applicable country shall apply. The provisions of the United Nations Convention on Contracts for the International Sale of Goods shall not apply to this Agreement or any subject matter hereof.

10.5 Assignment. Neither Party may assign this Agreement without the consent of the other Party, except as otherwise provided in **Section 2.3.2** and this **Section 10.5**. Either Party may assign this Agreement in whole or in part to any Affiliate of such Party without the consent of the other Party; provided that, such assigning Party provides the other Party with written notice of such assignment and the assignee agrees in writing to assume performance of all assigned obligations. Further, each Party may assign this Agreement, and all of its rights and obligations, without the consent of the other Party to its successor in interest by way of merger, acquisition, or sale of all or substantially all of its business or assets to which this Agreement relates; provided that, such assigning Party provides the other Party with written notice of such assignment and the assignee agrees in writing to assume performance of all assigned obligations. If any assignment of this Agreement by Beam (or one of Beam's Affiliates) to an Affiliate would result in withholding taxes that did not exist prior to such assignment (e.g., through a change in such assigning entity's jurisdiction of incorporation or residence for tax purposes), then the amount of any payment by such Affiliate hereunder shall be increased so that the net amount payable to Editas after the deduction of all incremental withholding taxes incurred as a result of such assignment equals the amount of the payment that would otherwise have been payable but for such assignment. The terms of this Agreement shall be binding upon and shall inure to the benefit of the successors, heirs, administrators and permitted assigns of the Parties. Any purported assignment in violation of this **Section 10.5** shall be null and void. If a Party assigns this Agreement in whole or in part to an Affiliate or Third Party as permitted by this **Section 10.5**, (x) the assigning Party shall thereafter remain liable for the performance by such assignee of all of such Party's financial obligations hereunder and the other Party may enforce such financial obligations against the assigning Party without first seeking to obtain performance from the assignee or exercising any other remedy or right that the enforcing Party may have and (y) the assigning Party shall thereafter remain liable for causing such assignee to perform all of the assigning Party's non-financial obligations hereunder.

10.6 Performance Warranty. Each Party hereby acknowledges and agrees that it shall be responsible for the full and timely performance as and when due under, and observance of all the covenants, terms, conditions and agreements set forth in this, Agreement by its Affiliate(s), licensees and sublicensees.

10.7 Force Majeure. No Party shall be held liable or responsible to the other Party nor be deemed to be in default under, or in breach of any provision of, this Agreement for failure or delay in fulfilling or performing any obligation (other than a payment obligation) of this Agreement when such failure or delay is due to force majeure, and without the fault or negligence of the Party so failing or delaying. For purposes of this Agreement, force majeure is defined as causes beyond the control of the Party, including acts of God; material changes in Law; war; civil commotion; destruction of production facilities or materials by fire, flood, earthquake, explosion or storm; labor disturbances; epidemic; and failure of public utilities or common carriers. In such event Editas or Beam, as the case may be, shall immediately notify the other Party of such inability and of the period for which such inability is expected to continue. The Party giving such notice shall thereupon be excused from such of its obligations under this Agreement as it is thereby disabled from performing for so long as it is so disabled for up to a maximum of [**] days, after which time Editas and Beam shall promptly meet to discuss in good faith how to best proceed in a manner that maintains and abides by the Agreement. To the extent possible, each Party shall use reasonable efforts to minimize the duration of any force majeure.

10.8 Notices. Any notice or request required or permitted to be given under or in connection with this Agreement shall be deemed to have been sufficiently given if in writing and personally delivered or sent by certified mail (return receipt requested), facsimile transmission (receipt verified), or overnight express courier service (signature required), prepaid, to the Party for which such notice is intended, at the address set forth for such Party below:

If to Editas,

addressed to:	Editas Medicine, Inc. 11 Hurley Street Cambridge, MA 02141 Attn: Chief Executive Officer Copy to: [**] Facsimile: [**]
with a copy to:	Wilmer Cutler Pickering Hale and Dorr LLP 60 State Street Boston, MA 02109 Attention: Steven D. Barrett, Esq. E-mail: Steven.Barrett@wilmerhale.com Telephone: (617) 526-6000 Facsimile: (617) 526-5000

If to Beam,

And prior to October 1, 2018, addressed to:	Beam Therapeutics Inc. 325 Vassar St. Suite 2A Cambridge, MA 02139 Attn: Chief Executive Officer E-mail: [**]
And following October 1, 2018, addressed to:	Beam Therapeutics Inc. 26 Landsdowne Street Cambridge, MA 02139 Attn: Chief Executive Officer E-mail: [**]
with a copy to:	Ropes & Gray LLP Prudential Tower 800 Boylston Street Boston, MA 02199 Telephone: (617) 951-7826 Facsimile: (617) 235-0706 E-mail: [**]

or to such other address for such Party as it shall have specified by like notice to the other Parties, provided that notices of a change of address shall be effective only upon receipt thereof.

If delivered personally or by facsimile transmission, the date of delivery shall be deemed to be the date on which such notice or request was given. If sent by overnight express courier service, the date of delivery shall be deemed to be the next business day after such notice or request was deposited with such service. If sent by certified mail, the date of delivery shall be deemed to be the third business day after such notice or request was deposited with the U.S. Postal Service.

10.9 Export Clause. Each Party acknowledges that the Laws of the United States restrict the export and re-export of commodities and technical data of United States origin. Each Party agrees that it will not export or re-export restricted commodities or the technical data of the other Party in any form without the appropriate United States and foreign government licenses.

10.10 Waiver. Neither Party may waive or release any of its rights or interests in this Agreement except in writing. The failure of either Party to assert a right hereunder or to insist upon compliance with any term of this Agreement shall not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition. No waiver by either Party of any condition or term in any one or more instances shall be construed as a continuing waiver of such condition or term or of another condition or term.

10.11 Severability. If any provision hereof should be held invalid, illegal or unenforceable in any jurisdiction, the Parties shall negotiate in good faith a valid, legal and enforceable substitute provision that most nearly reflects the original intent of the Parties and all other provisions hereof shall remain in full force and effect in such jurisdiction and shall be liberally construed in order to carry out the intentions of the Parties hereto as nearly as may be possible. Such invalidity, illegality or unenforceability shall not affect the validity, legality or enforceability of such provision in any other jurisdiction.

10.12 Entire Agreement. This Agreement, together with the Exhibits hereto and the Transaction Agreements, set forth all the covenants, promises, agreements, warranties, representations, conditions and understandings between the Parties hereto and supersede and terminate all prior agreements and understanding between the Parties. In particular, and without limitation, this Agreement supersedes and replaces the Existing Confidentiality Agreement and any and all term sheets relating to the transactions contemplated by this Agreement and exchanged between the Parties prior to the Effective Date. There are no covenants, promises, agreements, warranties, representations, conditions or understandings, either oral or written, between the Parties other than as set forth herein and therein. No subsequent alteration, amendment, change or addition to this Agreement shall be binding upon the Parties hereto unless reduced to writing and signed by the respective authorized officers of the Parties.

10.13 Independent Contractors. Nothing herein shall be construed to create any relationship of employer and employee, agent and principal, partnership or joint venture between the Parties. Each Party is an independent contractor. Neither Party shall assume, either directly or indirectly, any liability of or for the other Party. Neither Party shall have the authority to bind or obligate the other Party and neither Party shall represent that it has such authority.

10.14 Headings; Construction; Interpretation. Headings used herein are for convenience only and shall not in any way affect the construction of or be taken into consideration in interpreting this Agreement. The terms of this Agreement represent the results of negotiations between the Parties and their representatives, each of which has been represented by counsel of its own choosing, and neither of which has acted under duress or compulsion, whether legal, economic or otherwise. Accordingly, the terms of this Agreement shall be interpreted and construed in accordance with their usual and customary meanings, and each of the Parties hereto hereby waives the application in connection with the interpretation and construction of this Agreement of any rule of Law to the effect that ambiguous or conflicting terms or provisions contained in this Agreement shall be interpreted or construed against the Party whose attorney prepared the executed draft or any earlier draft of this Agreement.

10.15 Books and Records. Any books and records to be maintained under this Agreement by a Party or its Affiliates, licensees or sublicensees shall be maintained in accordance with GAAP to the extent such books and records are subject to an audit right under this Agreement.

10.16 Further Actions. Each Party shall execute, acknowledge and deliver such further instruments, and do all such other acts, as may be necessary or appropriate in order to carry out the expressly stated purposes and the clear intent of this Agreement.

10.17 Parties in Interest. All of the terms and provisions of this Agreement shall be binding upon, and shall inure to the benefit of and be enforceable by the Parties hereto and their respective successors, heirs, administrators and permitted assigns.

10.18 Performance by Affiliates. To the extent that this Agreement imposes obligations on Affiliates of a Party, such Party agrees to cause its Affiliates to perform such obligations.

10.19 Counterparts. This Agreement may be signed in counterparts, each and every one of which shall be deemed an original, notwithstanding variations in format or file designation which may result from the electronic transmission, storage and printing of copies from separate computers or printers. Facsimile signatures and signatures transmitted via PDF shall be treated as original signatures.

[*Signature page follows*]

IN WITNESS WHEREOF, the Parties have executed this Agreement by their duly authorized representatives as of the dates set forth below.

EDITAS MEDICINE, INC.

By: /s/ Andrew Hack
Name: Andrew Hack
Title: Chief Financial Officer

Date: 5/9/2018

BEAM THERAPEUTICS INC.

By: /s/ John Evans
Name: John Evans
Title: Chief Financial Officer

Date: 5/9/2018

[Signature Page to License Agreement]

Schedule 7.2

[**]

Exhibit A

[**]

Exhibit B

Licensed Patents

[**]

Exhibit 10.7

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [**], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO BEAM THERAPEUTICS INC. IF PUBLICLY DISCLOSED.

LICENSE AGREEMENT

by and between

BIO PALETTE CO., LTD.

and

BEAM THERAPEUTICS INC.

March 27, 2019

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LICENSE AGREEMENT

This License Agreement (this "Agreement"), effective as of March 27, 2019 (the "Effective Date"), is made by and between Bio Palette Co., Ltd., a Japanese corporation ("Bio Palette"), and Beam Therapeutics Inc., a Delaware corporation ("Beam") (each, a "Party" and collectively, the "Parties").

WHEREAS, Bio Palette is a biotechnology company pioneering new technologies in the field of genome editing and having valuable expertise in such technologies and their applications in various fields;

WHEREAS, Beam is a biotechnology company focused on developing precision genetic medicines through base editing; and

WHEREAS, Beam wishes to obtain license rights from Bio Palette with respect to certain Bio Palette-controlled Patents and Bio Palette wishes to obtain license rights from Beam with respect to certain Beam-controlled Patents, as more particularly set forth herein.

NOW, THEREFORE, in consideration of the premises and mutual covenants herein contained, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto agree as follows:

ARTICLE 1
DEFINITIONS AND INTERPRETATION

1.1. Definitions. The terms in this Agreement, when used with initial capital letters, have the meanings set forth below unless otherwise expressly specified in this Agreement:

1.1.1. "Abbreviated Application" means (a) an application submitted to the FDA under subsection (k) of Section 351 of the U.S. Public Health Service Act, 42 U.S.C. 201 *et seq.*, or (b) any analogous application to an application set forth in clause (a) submitted to a Regulatory Authority in the United States or in another country in the Territory.

1.1.2. "Abbreviated Approval Product" means, with respect to a Licensed Product and on a country-by-country basis, a product that (a) is marketed for sale in such country by a Third Party that is not licensed, supplied, or otherwise permitted by a Party or its Affiliates or sublicensees; (b) contains a Licensed Product or substantial equivalent or biosimilar product as an active pharmaceutical ingredient; and (c) as and to the extent required, is approved through a process that includes the approval of an Abbreviated Application.

1.1.3. "Affiliate" means, with respect to a Party, any person, corporation, firm, joint venture or other entity which, directly or indirectly through one or more intermediaries, controls, is controlled by or is under common control with such Party. As used in this definition, "control" means the possession of the majority of the ownership, or the power to direct or cause the direction of the management and policies, of an entity, whether through the ownership of the outstanding voting securities thereof, by contract or otherwise.

1.1.4. "Applicable In-Licenses" means, (a) with respect to the license grant to Beam under Section 2.1.1, the Bio Palette In-License and (b) with respect to the license grant to Bio Palette under Section 2.1.2, the Beam In-Licenses.

1.1.5. "Arbitration Request" has the meaning set forth in Section 10.2.

1.1.6. "Asia Territory" means Brunei, Burma (Myanmar), Cambodia, China (PRC), East Timor, Hong Kong, Indonesia, Japan, Laos, Macau, Malaysia, Mongolia, North Korea, Philippines, Singapore, South Korea, Taiwan (ROC), Thailand, Timor-Leste and Vietnam.

1.1.7. "Bankruptcy Laws" has the meaning set forth in Section 2.6.

1.1.8. "Base Editing" means [**].

1.1.9. "Base Editing Window" means a region within [**] nucleotides of a specific polynucleotide sequence bound by the nucleic acid binding protein.

1.1.10. "Base Editor" means [**].

1.1.11. "Beam-Broad Agreement" means the License Agreement by and between The Broad Institute, Inc. and Blink Therapeutics Inc., a wholly-owned subsidiary of Beam, dated as of May 9, 2018, as such agreement may be amended from time to time in accordance with its terms.

1.1.12. "Beam Common Stock" means shares of common stock, $0.01 par value per share, issued by Beam.

1.1.13. "Beam-Editas Agreement" means the License Agreement by and between Editas and Beam dated as of May 9, 2018, as such agreement may be amended from time to time in accordance with its terms.

1.1.14. "Beam Field" means the treatment, diagnosis or prevention of any human diseases or conditions, but excluding the Microbiome Field.

1.1.15. "Beam-Harvard Agreement" means the License Agreement by and between President and Fellows of Harvard College and Beam, dated as of June 27, 2017, as such agreement may be amended from time to time in accordance with its terms.

1.1.16. "Beam Indemnitee" has the meaning set forth in Section 8.2.

1.1.17. "Beam In-Licenses" means the Beam-Harvard Agreement, the Beam-Broad Agreement and the Beam-Editas Agreement.

1.1.18. "Beam Licensed Product" means any product or service the making, using, selling, offering for sale, exporting or importing of which is Covered by a Valid Claim of a Bio Palette Patent in the country of such manufacture or sale, as applicable.

1.1.19. "Beam Patents" means (a) the Patents set forth on Exhibit A, as may be amended or supplemented in writing by the Parties from time to time in accordance with this Agreement, and (b) any substitutions, divisionals, continuations, continuations-in-part (only to the extent of claims that are entitled to the priority date of and directed specifically to the subject matter claimed in the applications listed on Exhibit A), substitutes, counterparts and foreign equivalents thereof filed in any country, and any patents issuing thereon (but in the case of Patents issuing on continuation-in-part applications, only to the claims thereof that are entitled to the priority date of and directed specifically to the subject matter claimed in the applications listed on Exhibit A) and any reissues, reexaminations or extensions thereof, in each case, that are Controlled by Beam or its Affiliates during the Term. In addition, if, at any time during the Term, Beam Controls any Patents pursuant to a license grant to Beam under Section 2.5 of the Beam-Editas Agreement, such Patents will be deemed Beam Patents hereunder, and Exhibit A shall be updated to include such Patents and thereafter such Patents shall be included within the "Beam Patents".

1.1.20. "Bio Palette Indemnitee" has the meaning set forth in Section 8.1.

1.1.21. "Bio Palette In-License" means the License Agreement by and between Kobe University and Bio Palette, dated as of May 9, 2017, as such agreement may be amended from time to time in accordance with its terms.

1.1.22. "Bio Palette Licensed Product" means any product or service the making, using, selling, offering for sale, exporting or importing of which is Covered by a Valid Claim of a Beam Patent in the country of such manufacture or sale, as applicable.

1.1.23. "Bio Palette Patents" means (a) the Patents set forth on Exhibit B, as may be amended or supplemented in writing by the Parties from time to time in accordance with this Agreement, and (b) any substitutions, divisionals, continuations, continuations-in-part (only to the extent of claims that are entitled to the priority date of and directed specifically to the subject matter claimed in the applications listed on Exhibit B), substitutes, counterparts and foreign equivalents thereof filed in any country, and any patents issuing thereon (but in the case of Patents issuing on continuation-in-part applications, only to the claims thereof that are entitled to the priority date of and directed specifically to the subject matter claimed in the applications listed on Exhibit B) and any reissues, reexaminations or extensions thereof, in each case, that are Controlled by Bio Palette or its Affiliates during the Term.

1.1.24. [**]

1.1.25. "BLA" means a Biologics License Application as defined in the U.S. Federal Food, Drug, and Cosmetic Act, 21 U.S.C. § 301 *et seq.*, or any corresponding foreign application in the Territory, including, with respect to the European Union, a Marketing Authorization Application filed with the EMA pursuant to the Centralized Approval Procedure or with the applicable Regulatory Authority of a country in Europe with respect to the mutual recognition or any other national approval procedure.

1.1.26. "Breaching Party" has the meaning set forth in Section 9.3.

1.1.27. "Broad" means The Broad Institute, Inc.

1.1.28. "Business Day" means any day other than a Saturday, Sunday or other day on which banking institutions in Boston, Massachusetts or Kobe, Japan are permitted or required to remain closed.

1.1.29. "Challenging Party" has the meaning set for in Section 9.4.

1.1.30. "Claims" has the meaning set forth in Section 8.1.

1.1.31. "Clinical Trial" means any clinical trial in humans that is conducted in accordance with Good Clinical Practices and is designed to generate data to obtain, support, or maintain an IND or BLA, or other similar marketing application.

1.1.32. "Commercialization" and "Commercialize" means all activities undertaken relating to the marketing, promotion (including advertising, detailing, sponsored product or continuing medical education), any other offering for sale, distribution or sale of a product.

1.1.33. "Commercially Reasonable Efforts" means (a) with respect to the efforts to be expended by a Party with respect to an agreed objective, except as otherwise provided in clause (b), such reasonable, diligent and good faith efforts as such Party would normally use to accomplish a similar objective under similar circumstances taking into account the reasonable allocation of such Party's resources under the circumstances, and [**]. It is anticipated that the level of effort to be expended in the use of Commercially Reasonable Efforts will change over time, including to reflect changes in the status of the Licensed Product and the countries (or markets) involved. For the avoidance of doubt, where a Party has an obligation to use Commercially Reasonable Efforts, the efforts of such Party and its Affiliates and sublicensees shall be considered in determining whether such Party has satisfied such obligation.

1.1.34. "Confidential Information" has the meaning set forth in Section 6.1.

1.1.35. "Continuing Party" means (a) in the case of termination of this Agreement by a Party pursuant to Section 9.2 with respect to the license granted to such Party under Section 2.1, the Party not terminating the Agreement and (b) in the case of termination of this Agreement by a Party pursuant to Section 9.3, Section 9.4 or Section 9.5 with respect to the license granted to the other Party under Section 2.1, such terminating Party.

1.1.36. "Control" means with respect to any product, Patent or other tangible or intangible intellectual property right, the possession (whether by ownership or license, other than licenses granted pursuant to this Agreement) by a Party or its Affiliate of the ability to grant to the other Party access to, ownership of, or a license or sublicense under, such product, Patent, or other intellectual property without violating the terms of any agreement or other arrangement with any Third Party.

1.1.37. "Cover," "Covering," "Covered," or "Covers" means, as to any subject matter and a Patent, that, in the absence of a license granted under, or ownership of, such Patent, the making, using, selling, offering for sale or importation of such subject matter would infringe such Patent or, as to a pending Patent, the making, using, selling, offering for sale, importation or other practice of such subject matter would infringe such Patent if such Patent were to issue without modification, in each case, without regard to the validity or enforceability of such Patent.

1.1.38. "Develop" or "Development" means, with respect to a product, all activities relating to non-clinical and preclinical testing and trials, clinical testing and trials, including Clinical Trials, toxicology testing, modification, optimization and animal efficacy testing of pharmaceutical compounds, statistical analysis, publication and presentation of study results and reporting, preparation and submission to Regulatory Authorities with respect to such product.

1.1.39. "Disclosing Party" has the meaning set forth in Section 6.1.

1.1.40. "Dollars" or "$" means the legal currency of the United States.

1.1.41. "Editas" means Editas Medicine, Inc.

1.1.42. "EMA" means the European Medicines Agency, and any successor entity thereto.

1.1.43. "Executive Officers" means the respective chief executive officers of Bio Palette and Beam.

1.1.44. "Existing Confidentiality Agreement" has the meaning set forth in Section 6.5.

1.1.45. "Exploit" means to research, make, have made, import, export, distribute, use, have used, sell, have sold or offer for sale, including to Develop, Manufacture, Commercialize, register, modify, enhance, improve or otherwise dispose of.

1.1.46. "FDA" means the U.S. Food and Drug Administration, and any successor entity thereto.

1.1.47. "Field" means the treatment, diagnosis or prevention of any human diseases or conditions.

1.1.48. "First Commercial Sale" means, with respect to a Licensed Product in a country, the first sale for end use or consumption of such Licensed Product in such country after receipt of all Regulatory Approvals for such Licensed Product in such country, excluding, however, any sale or other distribution for use in a Clinical Trial.

1.1.49. "GAAP" means generally accepted accounting principles.

1.1.50. "Governmental Authority" means any United States federal, state or local or any foreign government, or political subdivision thereof, or any multinational organization or authority or any authority, agency, division, board or commission entitled to exercise any administrative, executive, judicial, legislative, police, regulatory or taxing authority or power, any court or tribunal (or any department, bureau or division thereof), or any governmental arbitrator or arbitral body.

1.1.51. "Harvard" means the President and Fellows of Harvard College.

1.1.52. "IND" means an investigational new drug application submitted to the FDA pursuant to Part 312 of Title 21 of the U.S. Code of Federal Regulations, including any amendments thereto. References herein to IND shall include, to the extent applicable, any comparable filing(s) outside the U.S. for the investigation of any product in any other country or group of countries (such as a clinical trial application in the European Union).

1.1.53. "IND Acceptance" means, with respect to a product, the thirtieth (30th) day following filing of an IND by the FDA, or, if a clinical hold is placed on the IND during such 30-day period, the date that such clinical hold is lifted, or the acceptance of an IND in any equivalent Regulatory Authority in any other regulatory jurisdiction such that Clinical Trials may be initiated with respect to such product.

1.1.54. "Indemnified Party" has the meaning set forth in Section 8.3.

1.1.55. "Indemnifying Party" has the meaning set forth in Section 8.3.

1.1.56. "Initiation" means, with respect to a Clinical Trial, the first dosing of the first subject in such Clinical Trial.

1.1.57. "In-Licensor" means a Third Party that grants a license to a Party under an Applicable In-License.

1.1.58. "JSC" has the meaning set forth in Section 3.1.

1.1.59. "Know-How" shall mean any invention, discovery, development, data, information, process, method, technique, trade secret, composition of matter, formulation, article of manufacture or other know-how, and any physical embodiments of any of the foregoing.

1.1.60. "Kobe University" means Kobe University, a national university corporation organized under the Laws of Japan.

1.1.61. "Law" means the applicable laws, rules and regulations, including any rules, regulations, guidelines or other requirements of any Governmental Authorities (including any Regulatory Authorities) that may be in effect from time to time in any country or jurisdiction of the Territory.

1.1.62. "License Expansion Date" means, on a Bio Palette Licensed Product-by-Bio Palette Licensed Product basis with respect to each Bio Palette Licensed Product for which Beam elects to expand the territory of the license granted to Bio Palette under clause (a) of Section 2.1.2 for such Bio Palette Licensed Product to the entire Territory, the date of Beam's written notice to Bio Palette of such election.

1.1.63. "Licensed Product" means, with respect to Beam, a Beam Licensed Product and, with respect to Bio Palette, a Bio Palette Licensed Product.

1.1.64. "Licensee" means, with respect to a Beam Licensed Product Commercialized by Beam or its Affiliates, sublicensees or sublicensees' Affiliates, Beam, and with respect to a Bio Palette Licensed Product Commercialized by Bio Palette or its Affiliates, sublicensees or sublicensees' Affiliates, Bio Palette.

1.1.65. "Licensor" means, with respect to a Beam Licensed Product Commercialized by Beam or its Affiliates, sublicensees or sublicensees' Affiliates, Bio Palette, and with respect to a Bio Palette Licensed Product Commercialized by Bio Palette or its Affiliates, sublicensees or sublicensees' Affiliates, Beam.

1.1.66. "Losses" has the meaning set forth in Section 8.1.

1.1.67. "Major Markets" means the United States, Japan, the United Kingdom, France, Germany, Italy and Spain.

1.1.68. "Manufacture" or "Manufacturing" means all activities related to the manufacturing or having manufactured of a product, or any ingredient thereof, including manufacturing for Development and Commercialization, labeling, packaging, in-process and finished product testing, release of such product or any ingredient thereof, quality assurance activities related to manufacturing and release of such product, ongoing stability tests and regulatory activities related to any of the foregoing.

1.1.69. "MGH" has the meaning set forth in Section 7.5.3.

1.1.70. "Microbiome Field" means [**].

1.1.71. "Net Sales" means the gross amount billed or invoiced by or on behalf of a Party, its Affiliates, sublicensees and any Affiliates of such sublicensees (in each case, the "Invoicing Entity") or if not billed or invoiced the gross amount received by the Invoicing Entity, on sales, leases, uses or other transfers of Beam Licensed Products, in the case of Beam as the applicable Party, or Bio Palette Licensed Products, in the case of Bio Palette as the applicable Party, less the following to the extent applicable with respect to such sales, leases or other transfers and not previously deducted from the gross invoice price (in each case, determined and deducted in accordance with the standard accounting practices used by the applicable Party):

(a) customary trade, quantity or cash discounts to the extent actually allowed and taken;

(b) amounts actually repaid or credited by reason of rejection, return or recall of any previously sold, leased or otherwise transferred Licensed Products;

(c) rebates granted or given;

(d) allowances for non-collectible receivables;

(e) customer freight charges that are paid by or on behalf of the Invoicing Entity; and

(f) to the extent separately stated on purchase orders, invoices or other documents of sale, any sales, value added or similar taxes, custom duties or other similar governmental charges levied directly on the production, sale, transportation, delivery or use of a Licensed Product that are paid by or on behalf of the Invoicing Entity, but not including any tax levied with respect to income;

provided that:

(i) in no event shall the aggregate amount of all deductions made pursuant to clauses (d) and (e) above in any calendar quarter exceed [**] percent ([**]%) of Net Sales in such calendar quarter;

(ii) Net Sales shall not include (1) sales or other transfers of any Licensed Product used for Clinical Trials or other research, or (2) donations for charity or compassionate use for which an Invoicing Entity does not receive consideration;

(iii) in any transfers of Licensed Products between an Invoicing Entity and an Affiliate or sublicensee of such Invoicing Entity not for the purpose of resale by such Affiliate or sublicensee, Net Sales shall be equal to the fair market value of the Licensed Products so transferred, assuming an arm's length transaction made in the ordinary course of business;

(iv) in the event that (1) an Invoicing Entity receives non-cash consideration for any Licensed Products, (2) an Invoicing Entity sells Licensed Products in a transaction not at arm's length with a non-Affiliate of an Invoicing Entity, or (3) any Licensed Product is sold by an Invoicing Entity at a discounted price that is substantially lower than the customary prices charged by such Invoicing Entity, Net Sales shall be calculated based on the fair market value of such consideration or transaction, assuming an arm's length transaction made in the ordinary course of business, provided that, if a Licensed Product is sold under circumstances in which the discounted price is the result of market forces and not a quid pro quo for value other than the monetary consideration charged in such sale of Licensed Product, such discounted price shall be deemed to be a customary price;

(v) with respect to any provision hereof requiring a calculation of fair market value, assuming an arm's length transaction made in the ordinary course of business, the Invoicing Entity may use the average price of the relevant Licensed Product sold for cash during the relevant period in the relevant country; and

(vi) sales of Licensed Products by an Invoicing Entity to its Affiliate or a sublicensee for resale by such Affiliate or sublicensee shall not be deemed Net Sales. Instead, Net Sales shall be determined based on the gross amount billed or invoiced by such Affiliate or sublicensee upon resale of such Licensed Products to any third party that is not an Affiliate or sublicensee of the Invoicing Entity.

1.1.72. "Non-Breaching Party" has the meaning set forth in Section 9.3.

1.1.73. "Non-Challenging Party" has the meaning set forth in Section 9.4.

1.1.74. "Non-Continuing Party" means (a) in the case of termination of this Agreement by a Party pursuant to Section 9.2 with respect to the license granted to such Party under Section 2.1, such terminating Party and (b) in the case of termination of this Agreement by a Party pursuant to Section 9.3, Section 9.4 or Section 9.5 with respect to the license granted to the other Party under Section 2.1, the Party not terminating the Agreement.

1.1.75. "Pass-Through Amount" has the meaning set forth in Section 4.8.

1.1.76. "Patent" means (a) all patents and patent applications in any country or supranational jurisdiction in the Territory, (b) any substitutions, divisionals, continuations, continuations-in-part, provisional applications, reissues, renewals, registrations, confirmations, re-examinations, extensions, supplementary protection certificates and the like of any such patents or patent applications, (c) foreign counterparts of any of the foregoing, (d) all applications claiming priority to any of the foregoing, (e) any patents issuing on any patent application identified in clauses (a) through (e), (f) any application to which any of the foregoing claim priority and (g) any application that claims common priority with any of the foregoing.

1.1.77. "Patent-Based Exclusivity" means, (a) with respect to a Beam Licensed Product in a country in the Territory, that at least one Valid Claim of the Bio Palette Patents Covers such Beam Licensed Product in such country and (b) with respect to a Bio Palette Licensed Product in a country in the Territory, that at least one Valid Claim of the Beam Patents Covers such Bio Palette Licensed Product in such country.

1.1.78. "Patent Challenge" means any direct or indirect dispute or challenge, or any knowing, willful or reckless assistance in the dispute or challenge, of the validity, patentability, scope, priority, construction, non-infringement, inventorship, ownership or enforceability of any Patent or any claim thereof, or opposition or assistance in the opposition of the grant of any letters patent, in any legal or administrative proceedings, including in a court of law, before the United States Patent and Trademark Office or other agency or tribunal in any jurisdiction, or in arbitration including by reexamination, *inter partes* review, opposition, interference, post-grant review, nullity proceeding, preissuance submission, third party submission, derivation proceeding or declaratory judgment action, in each case, (a) in the case of Beam, with respect to any Bio Palette Patent or (b) in the case of Bio Palette, with respect to any Beam Patent; provided, however, that the term Patent Challenge shall not include (i) a Party or any of its Affiliates or sublicensees being an essential party in any patent interference proceeding before the United States Patent and Trademark Office, which interference such Party or its applicable Affiliate or sublicensee acts in good faith to try to settle or (ii) a Party or any of its Affiliates or sublicensees, due to its status as an exclusive licensee of patent rights other than those licensed to such Party under Section 2.1.1 or Section 2.1.2, as applicable, being named by the licensor of such patent rights as a real party in

interest in such an interference, so long as such Party or its applicable Affiliate or sublicensee either abstains from participation in, or acts in good faith to settle, the interference. For clarity, a Patent Challenge shall not include arguments made by a Party that (x) distinguish the inventions claimed in any Patents Controlled by such Party from those claimed in the Patents licensed to such Party under Section 2.1.1 or Section 2.1.2, as applicable, but (y) do not disparage the Patents licensed to such Party under Section 2.1.1 or Section 2.1.2, as applicable, or raise any issue of such Patents' compliance with or sufficiency under applicable patent laws, regulations or administrative rules, in each case, (1) in the ordinary course of *ex parte* prosecution of Patents Controlled by such Party or (2) in *inter partes* proceedings before the United States Patent and Trademark Office or other agency or tribunal in any jurisdiction (excluding interferences or derivation proceedings), or in arbitration, wherein Patents Controlled by such Party have been challenged.

1.1.79. "Person" means any individual, incorporated or unincorporated organization or association, Governmental Authority, or other entity.

1.1.80. "Phase 1 Clinical Trial" means any Clinical Trial as described in 21 C.F.R. §312.21(a), or, with respect to a jurisdiction other than the United States, a similar Clinical Trial.

1.1.81. "Phase 2 Clinical Trial" means any Clinical Trial as described in 21 C.F.R. §312.21(b), or, with respect to a jurisdiction other than the United States, a similar Clinical Trial.

1.1.82. "Phase 3 Clinical Trial" means any Clinical Trial as described in 21 C.F.R. §312.21(c), or, with respect to a jurisdiction other than the United States, a similar Clinical Trial.

1.1.83. "Receiving Party" has the meaning set forth in Section 6.1.

1.1.84. "Regulatory Approval" means the approval, license or authorization of the applicable Regulatory Authority for the marketing and sale of a product for a particular indication in a country in the Territory.

1.1.85. "Regulatory Authority" means the FDA in the U.S. or any health regulatory authority in another country in the Territory that is a counterpart to the FDA and holds responsibility for granting Regulatory Approval in such country, including the EMA and any successor(s) thereto.

1.1.86. "Regulatory Exclusivity" means any exclusive marketing rights or data exclusivity rights conferred by any Regulatory Authority with respect to a Licensed Product, other than Patents, that limits or prohibits a Person from (a) relying on pivotal safety or efficacy data generated by or on behalf of the Parties with respect to the Licensed Product in an application for Regulatory Approval of an Abbreviated Approval Product, or (b) Commercializing the Licensed Product or an Abbreviated Approval Product, including rights conferred in the U.S. under the Hatch Waxman Act or the FDA Modernization Act of 1997 (including pediatric exclusivity, orphan drug exclusivity, or rights similar thereto outside the U.S.).

1.1.87. "Regulatory Materials" means regulatory applications, submissions, notifications, registrations, marketing authorizations or other written materials, correspondence, submissions made to or with a Regulatory Authority that are necessary or reasonably desirable in order to Develop, Manufacture or Commercialize the Licensed Products in the Field in a particular country.

1.1.88. “ROW Territory” means all countries of the world excluding the Asia Territory.

1.1.89. “Royalty Term” means, as to a Licensed Product and a country, the period commencing on the First Commercial Sale of the relevant Licensed Product in the relevant country and expiring on a country-by-country basis and Licensed Product-by-Licensed Product basis on the later of (i) the expiration of Patent-Based Exclusivity with respect to such Licensed Product in such country and (ii) the expiration of Regulatory Exclusivity with respect to such Licensed Product in such country.

1.1.90. “Term” has the meaning set forth in Section 9.1.

1.1.91. “Territory” means worldwide.

1.1.92. “Third Party” means any Person other than Bio Palette, Beam or any Affiliate of either Party.

1.1.93. “Valid Claim” means (a) a claim of an issued patent in the U.S. or in a jurisdiction outside the U.S., that has not expired, lapsed, been cancelled or abandoned, or been dedicated to the public, disclaimed, or held unenforceable, invalid, or cancelled by a court or administrative agency of competent jurisdiction in an order or decision from which no appeal has been or can be taken, including through opposition, reexamination, reissue or disclaimer, or (b) a claim of a pending patent application that is filed and being prosecuted in good faith and that has not been finally abandoned or finally rejected and which has been pending for no more than [**] years from the date of filing of the earliest patent application to which such pending patent application claims priority.

1.2. Interpretation. The captions and headings to this Agreement are for convenience only, and are to be of no force or effect in construing or interpreting any of the provisions of this Agreement. Unless specified to the contrary, references to Sections or Exhibits shall refer to the particular Sections or Exhibits of or to this Agreement and references to this Agreement include all Exhibits hereto. Unless context otherwise clearly requires, whenever used in this Agreement:

1.2.1. any definition of or reference to any agreement, instrument or other document refers to such agreement, instrument other document as from time to time amended, supplemented or otherwise modified (subject to any restrictions on such amendments, supplements or modifications set forth herein or therein),

1.2.2. any reference to any Law refers to such Law as from time to time enacted, repealed or amended,

1.2.3. the words “include” or “including” shall be construed as incorporating, also, “but not limited to” or “without limitation;”

1.2.4. the word “day,” “quarter” or “year” (and derivatives thereof, *e.g.*, “quarterly”) means a calendar day, calendar quarter or calendar year unless otherwise specified (and “annual” or “annually” refer to a calendar year);

1.2.5. the word “notice” means notice in writing (whether or not specifically stated) and shall include notices, consents, approvals and other written communications contemplated under this Agreement;

1.2.6. the word “hereof,” “herein,” “hereby” and derivative or similar word refers to this Agreement (including any Exhibits);

1.2.7. the word “or” shall have its inclusive meaning identified with the phrase “and/or;”

1.2.8. the words “will” and “shall” shall have the same obligatory meaning;

1.2.9. provisions that require that a Party or the Parties hereunder “agree,” “consent” or “approve” or the like shall require that such agreement, consent or approval be specific and in writing, whether by written agreement, letter, approved minutes or otherwise;

1.2.10. words of any gender include the other gender; and

1.2.11. words using the singular or plural number also include the plural or singular number, respectively.

ARTICLE 2
LICENSE AND OPTIONS

2.1. License Grants.

2.1.1. Exclusive License to Beam. Subject to the terms and conditions of this Agreement, Bio Palette hereby grants to Beam an exclusive (even as to Bio Palette and its Affiliates) right and license, with the right to grant sublicenses subject to Section 2.2, under the Bio Palette Patents (a) to Exploit Beam Licensed Products (i) in the Field in the ROW Territory, subject to Bio Palette’s retained right to Develop and Manufacture Beam Licensed Products in the Microbiome Field in the ROW Territory for the sole purpose of Exploiting such Beam Licensed Products in the Asia Territory, (ii) in the Beam Field in the Asia Territory and (b) to Develop and Manufacture Beam Licensed Products in the Microbiome Field in the Asia Territory for the sole purpose of Exploiting such Beam Licensed Products in the ROW Territory.

2.1.2. Exclusive License to Bio Palette. Subject to the terms and conditions of this Agreement, Beam hereby grants to Bio Palette an exclusive (even as to Beam and its Affiliates) right and license, with the right to grant sublicenses subject to Section 2.2, under the Beam Patents (a) to Exploit Bio Palette Licensed Products in the Microbiome Field in the Asia Territory, subject to Beam’s retained right to Develop and Manufacture Bio Palette Licensed Products in the Microbiome Field in the Asia Territory for the sole purpose of Exploiting such Bio Palette Licensed Products in the ROW Territory, and (b) to Develop and Manufacture Bio Palette Licensed Products in the Microbiome Field in the ROW Territory for the sole purpose of

Exploiting such Bio Palette Licensed Products in the Asia Territory. Notwithstanding the foregoing, on a Bio Palette Licensed Product-by-Bio Palette Licensed Product basis, Beam may elect, in its sole discretion, by written notice to Bio Palette, to expand the territory of the license granted under the foregoing clause (a) for such Bio Palette Licensed Product to the entire Territory, in which case, subject to each Party's respective obligation to pay for the percentage of milestone payments accruing on or after the License Expansion Date with respect to a Bio Palette Licensed Product as set forth in Section 2.7.4, (i) such license grant shall automatically be expanded to include the entire Territory, (ii) Beam shall no longer have a retained right to Develop and Manufacture such Bio Palette Licensed Product in the Microbiome Field in the Asia Territory and (iii) Beam shall no longer have a right to Exploit such Bio Palette Licensed Product in the Microbiome Field in the ROW Territory.

2.2. Sublicensing Rights.

2.2.1. Each Party shall have the right to grant sublicenses under the rights granted to it under Section 2.1.1 or Section 2.1.2, as applicable, to any of its Affiliates or Third Parties. The sublicensing Party shall provide the other Party with a fully-executed copy of any agreement (which the sublicensing Party may redact as necessary to protect confidential or commercially sensitive information) reflecting any such sublicense promptly after the execution thereof. If the sublicensing Party grants a sublicense, the terms and conditions of this Agreement and the Applicable In-Licenses that are applicable to sublicensees shall apply to such sublicensee to the same extent as they apply to the sublicensing Party. The sublicensing Party assumes full responsibility, and shall remain primarily liable, for causing the performance of all obligations of each Affiliate or Third Party sublicensee to which it grants a sublicense, and will itself pay and account to the other Party for all payments due under this Agreement by reason of operation of any such sublicense.

2.2.2. Notwithstanding the foregoing, with respect to any Beam Patent Controlled by Beam pursuant to the Beam-Editas Agreement, (a) Bio Palette shall promptly notify Beam if Bio Palette intends to grant a sublicense under the rights granted to it under Section 2.1.2 with respect to such Beam Patent so that Beam may seek permission from Editas for such grant and, (b) unless and until the receipt of written agreement by Editas and its licensors to permit further sublicensing to a Third Party, Bio Palette shall not have the right to grant any sublicenses under such Beam Patent (other than to Affiliates of Bio Palette, subject to all restrictions on the granting of sublicenses herein).

2.2.3. If, at any time during the Term, Beam desires to grant a sublicense to a Third Party under the rights granted to it under Section 2.1.1, and Bio Palette has not yet entered into an amendment to the Bio Palette In-License as contemplated by Section 7.4.7, then upon Beam's request, Bio Palette shall, and does hereby, grant, without further consideration from Beam or such Third Party, a direct license to such Third Party as Beam directs, of a scope requested by Beam that is within the scope of Beam's license granted under Section 2.1.1, provided that any sale or transfer of Beam Licensed Products by such direct licensee under such direct license shall be included in Net Sales hereunder. Notwithstanding anything to the contrary in this Agreement, effective as of such grant of a direct license to such Third Party, (i) if Beam has requested that such direct license to such Third Party be an exclusive license, then the scope of the license granted to such Third Party under such direct license shall automatically be excluded from the scope of

Beam's license granted under Section 2.1.1 and (ii) if Beam has requested that such direct license to such Third Party be a non-exclusive license, then the scope of Beam's license granted under Section 2.1.1 shall automatically become non-exclusive with respect to the scope of the license granted to such Third Party under such direct license, in each case of clause (i) and (ii) until such time that Beam notifies Bio Palette that such direct license to such Third Party is terminated, at which time such scope shall again be included within the scope of Beam's license granted under Section 2.1.1 with no further action by the Parties.

2.3. No Implied Licenses; Reservation of Rights. Except as explicitly set forth in this Agreement, neither Party shall acquire under this Agreement any license, intellectual property interest or other rights, by implication or otherwise, under any Patents or other intellectual property rights Controlled by the other Party or its Affiliates. Any rights of a Party not expressly granted to the other Party pursuant to this Agreement shall be retained by such first Party.

2.4. Coordination in the Microbiome Field. If, during the Term, either Party Exploits a Licensed Product in the Microbiome Field under the license granted under Section 2.1.1 or Section 2.1.2, respectively, such Party may provide written notice of such Licensed Product to the other Party indicating a desire to engage in the discussions described in this Section 2.4. In the event of any such notice with respect to any such Licensed Product Exploited by Bio Palette in the Microbiome Field in the Asia Territory, [**]. If Beam determines not to Exploit such Licensed Product in the Microbiome Field in the ROW Territory, then, with Beam's prior written consent, and without limiting Beam's obligations under Section 2.7.4, [**]. In the event of any such notice with respect to any such Licensed Product Exploited by Beam in the Microbiome Field in the ROW Territory, [**]. If Bio Palette determines not to Exploit such Licensed Product in the Microbiome Field in the Asia Territory, then, with Bio Palette's prior written consent, [**].

2.5. Right of First Negotiation.

2.5.1. Beam ROFN. If, at any time during the Term, Bio Palette Controls any Patent [**] other than the Bio Palette Patents and intends to grant a license under such Patent [**], prior to entering into negotiations with any Third Party regarding any such license, Bio Palette shall provide notice to Beam identifying such Patent, and Beam shall have an exclusive right of first negotiation for an exclusive license under such Patent to Exploit products [**]. Beam shall have [**] after receipt of each such notice from Bio Palette to provide Bio Palette notice that it desires to exercise such exclusive right of first negotiation. If Beam provides such an exercise notice, the Parties will promptly commence good faith negotiations regarding the terms of an agreement providing for the grant of [**]. In the event that the Parties fail to reach agreement within [**] from the date of Beam's exercise notice with respect to such agreement, Bio Palette may [**]; provided that (i) Bio Palette may only [**], and (ii) Bio Palette shall not[**]. For the avoidance of doubt, if Bio Palette provides notice to Beam for the field and territory described in either, but not both of, clause (a) or clause (b) of the first sentence of this Section 2.5.1 with respect to any Patent, then Beam's right of first negotiation shall continue to apply with respect to such Patent for the field and territory for which Bio Palette has not provided such notice.

2.5.2. Bio Palette ROFN. If, at any time during the Term, Beam Controls any Patent [**] other than the Beam Patents and intends to grant a license under such Patent [**], prior to entering into negotiations with any Third Party regarding any such license, Beam shall provide notice to Bio Palette identifying such Patent, and Bio Palette shall have an exclusive right of first negotiation for an exclusive license under such Patent to Exploit products [**]. Bio Palette shall have [**] after receipt of each such notice from Beam to provide Beam notice that it desires to exercise such exclusive right of first negotiation. If Bio Palette provides such an exercise notice, the Parties will promptly commence good faith negotiations regarding the terms of an agreement providing for the grant of [**]. In the event that the Parties fail to reach agreement within [**] from the date of Bio Palette's exercise notice with respect to such agreement, Beam may [**]; provided that (a) Beam may only [**], and (b) Beam shall not [**]. For the avoidance of doubt, if Beam provides notice to Bio Palette for the field and territory described in either, but not both of, clause (a) or clause (b) of the first sentence of this Section 2.5.2 with respect to any Patent, then Bio Palette's right of first negotiation shall continue to apply with respect to such Patent for the field and territory for which Beam has not provided such notice.

2.6. Rights Upon Bankruptcy. All rights and licenses granted under or pursuant to this Agreement are, and shall otherwise be deemed to be, for purposes of Section 365(n) of Title 11 of the United States Code and other similar laws in any jurisdiction outside the U.S. (collectively, the "Bankruptcy Laws"), licenses of rights to "intellectual property" as defined under the Bankruptcy Laws. If a case is commenced during the term of this Agreement by or against a Party under Bankruptcy Laws then, unless and until this Agreement is rejected as provided in such Bankruptcy Laws, such Party (in any capacity, including debtor-in-possession) and its successors and assigns (including a trustee) shall perform all of the obligations provided in this Agreement to be performed by such Party. If a case is commenced during the term of this Agreement by or against a Party under the Bankruptcy Laws, this Agreement is rejected as provided in the Bankruptcy Laws and the other Party elects to retain its rights hereunder as provided in the Bankruptcy Laws, then the Party subject to such case under the Bankruptcy Laws (in any capacity, including debtor-in-possession) and its successors and assigns (including a Title 11 trustee), shall provide to the other Party copies of all information necessary for such other Party to prosecute, maintain and enjoy its rights under the terms of this Agreement promptly upon such other Party's written request therefor. All rights, powers and remedies of the non-bankrupt Party as provided herein are in addition to and not in substitution for any and all other rights, powers and remedies now or hereafter existing at law or in equity (including the Bankruptcy Laws) in the event of the commencement of a case by or against a Party under the Bankruptcy Laws. All payments owed by a Party to the other Party under Section 4.4 are, and shall otherwise be deemed to be, for purposes of the Bankruptcy Laws, "royalties" as defined under the Bankruptcy Laws.

2.7. Beam In-Licenses.

2.7.1. Notwithstanding anything to the contrary in this Agreement, Bio Palette acknowledges and agrees that the rights, licenses, and sublicenses granted by Beam to Bio Palette in this Agreement (including any right to sublicense) are subject to the terms of the Beam In-Licenses, the scope of the licenses granted to Beam thereunder and the rights retained by Third Parties (including Governmental Authorities) set forth therein, including (a) Sections 2.2, 2.3, 2.4, 4.12, 5.3, 9.4, 9.6.2 and 10.15 of the Beam-Editas Agreement, (b) Sections 2.2, 2.4, 2.5, 4.5, 5.3, 6.4, 8.1, 9.1, 10.3, and 11.4 of the Beam-Harvard Agreement and (c) Sections 2.1.3, 2.4, 2.5, 2.6, 4.5, 5.1.1, 5.3, 6.5, 7.9, 8.1, 9.1, 10.2.3, 10.3.1, 10.3.2 and 11.5 of the Beam-Broad Agreement. At Beam's request, Bio Palette shall use Commercially Reasonable Efforts to, and cause its Affiliates and all sublicensees to use Commercially Reasonable Efforts to, take such actions as

may be required to assist Beam in complying with its obligations under the Beam In-Licenses, solely to the extent applicable to Bio Palette's rights or obligations under this Agreement. Without limiting any of the foregoing, Bio Palette agrees to be bound by the terms and conditions of the provisions set forth in Schedule 2.7.1, as applicable, with respect to sublicenses granted by Beam to Bio Palette under Section 2.1.2 under the Beam In-Licenses.

2.7.2. Bio Palette acknowledges and agrees that, if any of the licenses granted by Beam to Bio Palette under the Beam In-Licenses are terminated, in whole or in part, then Bio Palette's license under such terminated licenses(s) shall automatically terminate, subject to any right of Bio Palette to receive a direct license from the relevant Third Party, including under Section 9.6.2 of the Beam-Editas Agreement, Section 10.3.1 of the Beam-Harvard Agreement or Section 10.3.1 of the Beam-Broad Agreement.

2.7.3. Except as expressly set forth in Section 2.7.4, Bio Palette shall be responsible for any payments owed to a Third Party by Beam or its Affiliates under a Beam In-License arising out of the Development, Manufacturing or Commercialization of a Bio Palette Licensed Product under this Agreement by Bio Palette or its Affiliates, sublicensees or sublicensees' Affiliates (including, by way of illustration only, a royalty or milestone payment payable under such Beam In-License). Any payment owed by Bio Palette under this Section 2.7.3 shall be made by Bio Palette to Beam within [**] days after Bio Palette's receipt of an invoice from Beam.

2.7.4. [**].

2.8. Bio Palette In-License.

2.8.1. Notwithstanding anything to the contrary in this Agreement, Beam acknowledges and agrees that the rights, licenses, and sublicenses granted by Bio Palette to Beam in this Agreement (including any right to sublicense) are subject to the terms of the Bio Palette In-License, the scope of the licenses granted to Bio Palette thereunder and the rights retained by Third Parties (including Governmental Authorities) set forth therein, including but not limited to Article 1, Item 8 of the Bio Palette In-License. At Bio Palette's request, Beam shall use Commercially Reasonable Efforts to, and cause its Affiliates and all sublicensees to use Commercially Reasonable Efforts to, take such actions as may be required to assist Bio Palette in complying with its obligations under the Bio Palette In-License, solely to the extent applicable to Beam's rights or obligations under this Agreement.

2.8.2. Beam acknowledges and agrees that, if any of the licenses granted by Bio Palette to Beam under the Bio Palette In-License are terminated, in whole or in part, then Beam's license under such terminated licenses(s) shall automatically terminate.

2.8.3. Beam shall be responsible for any payments owed to a Third Party by Bio Palette or its Affiliates under the Bio Palette In-License arising out of the Development, Manufacturing or Commercialization of a Beam Licensed Product under this Agreement by Beam or its Affiliates, sublicensees or sublicensees' Affiliates (including, by way of illustration only, a royalty or milestone payment payable under the Bio Palette In-License). Any payment owed by Beam under this Section 2.8.3 shall be made by Beam to Bio Palette within [**] days after Beam's receipt of an invoice from Bio Palette.

2.8.4. In the event that Bio Palette does not make payment of all amounts required to renew the Bio Palette In-License at least [**] days prior to the expiration of any license period thereunder in accordance with Section 7.4.3, Beam shall have the right, but not the obligation, to make such payment on Bio Palette's behalf in order to cause the Bio Palette In-License to remain in effect. For the avoidance of doubt, it is understood that any such payment by Beam on behalf of Bio Palette shall not establish any direct contractual relationship between Beam and Kobe University.

2.8.5. If Bio Palette notifies Beam under Section 7.4.4 of any breach of the Bio Palette In-License, Beam shall have the right, but not the obligation, to cure such breach on Bio Palette's behalf in order to cause the Bio Palette In-License to remain in effect. For the avoidance of doubt, it is understood that any such cure undertaken by Beam on behalf of Bio Palette shall not establish any direct contractual relationship between Beam and Kobe University.

ARTICLE 3
DEVELOPMENT AND COMMERCIALIZATION

3.1. Joint Steering Committee. Promptly following the Effective Date, the Parties will form a joint steering committee (the "JSC") that will be responsible for facilitating discussions between the Parties under this Agreement regarding business development and strategy, Base Editing technology and related intellectual property. The Parties will each designate up to [**] representatives to serve as members of the JSC by written notice to the other Party. Either Party may designate substitutes for its representatives if one or more of such Party's designated representatives are unable to be present at a meeting. From time to time each Party may replace any of its representatives, in its sole discretion, effective upon written notice to the other Party. Each Party's representatives will have appropriate technical credentials, experience and knowledge with respect to the matters under discussion at the JSC. The JSC will meet at such times and in such places (or by teleconference) as mutually agreed by the Parties. The JSC may make recommendations to the Parties with respect to the matters under discussion, but will not have any decision-making authority.

3.2. Beam Scientific Advisory Board. In furtherance of the collaborative relationship between the Parties, during the period starting on the date on which Beam forms its Scientific Advisory Board and ending on the fifth (5th) anniversary of the Effective Date, each of [**] and [**] will be offered positions as members of Beam's Scientific Advisory Board (which Beam may or may not constitute in its discretion), on terms consistent with the other members of such Scientific Advisory Board. Notwithstanding anything to the contrary in this Agreement, in no event will Beam be obligated to share with Bio Palette or its representatives any material non-public technical information or other information that may cause Beam to become subject to a filing requirement under any rules or regulations promulgated by CFIUS or other similar Laws.

3.3. Japan Activities.

3.3.1. Beam acknowledges that Bio Palette possesses certain unique and valuable experience and expertise with respect to the Field in the Japan market, including in particular with respect to Base Editing in the Japan market, and that access to such experience and expertise is of great value to Beam. In order to strengthen the competitive position of both Parties, the Parties intend to [**]. Accordingly, upon Beam's written request to Bio Palette from time to time during the Term, Bio Palette agrees to [**]. Each Party will reasonably communicate with the other regarding potential collaborations in Base Editing in Japan, provided that nothing in this Section 3.3.1 shall limit either Party's right to determine its sublicensing strategy in its sole discretion, subject to Section 2.2, with respect to the rights licensed to such Party under Section 2.1.1 or Section 2.1.2, as applicable. Beam will [[**], provided that [**].

3.3.2. Bio Palette may propose to Beam an establishment of a collaboration between Beam, Bio Palette and a pharmaceutical company headquartered in Japan to develop products in the Beam Field in Japan. Beam will consider in good faith any such proposal by Bio Palette, unless (a) [**], or (b) [**]. Beam shall [**]; provided, however, that, if Beam [**].

3.4. Diligence.

3.4.1. Beam Diligence. Beam shall use Commercially Reasonable Efforts (a) to Develop one (1) Beam Licensed Product in the Major Markets and (b) with respect to any Beam Licensed Product that has received Regulatory Approval (i) in the Field in a country in the ROW Territory or (ii) in the Beam Field in a country in the Asia Territory, to Commercialize such Beam Licensed Product in such country.

3.4.2. Bio Palette Diligence. Bio Palette shall use Commercially Reasonable Efforts (a) to Develop [**] Bio Palette Licensed Product in Japan and (b) with respect to any Bio Palette Licensed Product that has received Regulatory Approval in the Microbiome Field in a country in the Asia Territory, to Commercialize such Bio Palette Licensed Product in such country.

3.5. Progress Reports. Each Party shall provide a written report to the other Party on an [**] basis, beginning on the [**] anniversary of the Effective Date, which report reasonably summarizes such Party's exercise of Commercially Reasonable Efforts under Section 3.4.1 or Section 3.4.2, as applicable.

3.6. Regulatory Activities.

3.6.1. Beam. Beam shall have the sole right and responsibility to prepare and file for Regulatory Approval and otherwise obtain and maintain approvals from Regulatory Authorities that are necessary for Exploitation of the Beam Licensed Products (a) in the Field in the ROW Territory, except with respect to Bio Palette Licensed Products in the Microbiome Field in a case where Beam elects to expand the territory of the license granted for such Bio Palette Licensed Product to the entire Territory in accordance with Section 2.1.2, and (b) in the Beam Field in the Asia Territory, and otherwise interact with Regulatory Authorities in the Territory as appropriate with respect to the Beam Licensed Products. Beam will own all such Regulatory Approvals and other Regulatory Materials for the Beam Licensed Products (i) in the Field in the ROW Territory, except with respect to Bio Palette Licensed Products in the Microbiome Field in a case where Beam elects to expand the territory of the license granted for such Bio Palette Licensed Product to the entire Territory in accordance with Section 2.1.2, and (ii) in the Beam Field in the Asia Territory.

3.6.2. Bio Palette. Bio Palette shall have the sole right and responsibility to prepare and file for Regulatory Approval and otherwise obtain and maintain approvals from Regulatory Authorities that are necessary for Exploitation of the Bio Palette Licensed Products (a) in the Microbiome Field in the Asia Territory and (b) in the Microbiome Field in the Territory for a Bio Palette Licensed Product for which Beam elects to expand the territory of the license granted to Bio Palette to the entire Territory in accordance with Section 2.1.2, and otherwise interact with Regulatory Authorities in the Asia Territory as appropriate with respect to the Bio Palette Licensed Products in the Microbiome Field. Bio Palette will own all such Regulatory Approvals and other Regulatory Materials for the Bio Palette Licensed Products (a) in the Microbiome Field in the Asia Territory and (b) in the Microbiome Field in the Territory for a Bio Palette Licensed Product for which Beam elects to expand the territory of the license granted to Bio Palette to the entire Territory in accordance with Section 2.1.2.

ARTICLE 4
COMPENSATION

4.1. Upfront Payment. In partial consideration for the rights granted by Bio Palette to Beam hereunder Beam shall pay Bio Palette a one-time, non-refundable, non-creditable payment of Five Hundred Thousand Dollars ($500,000) within [**] Business Days of the Effective Date.

4.2. Additional Upfront Payment. If Bio Palette Patent [**] issues in the United States, then, in partial consideration for the rights granted by Bio Palette to Beam hereunder with respect to such Bio Palette Patent, Beam shall pay Bio Palette a one-time, non-refundable, non-creditable payment of [**] within [**] of the date that such Bio Palette Patent issues.

4.3. Equity Issuance. In partial consideration for the rights granted by Bio Palette to Beam hereunder, within [**] Business Days of the Effective Date, Beam shall issue to Bio Palette, 75,000 shares of Beam Common Stock. In addition, if Bio Palette Patent[**] issues in the United States, then, in partial consideration for the rights granted by Bio Palette to Beam hereunder with respect to such Bio Palette Patent, within [**] of the date that such Bio Palette Patent issues, Beam shall issue to Bio Palette, [**] of Beam Common Stock. In connection with and as a condition to the issuance of shares pursuant to this Section 4.3, Bio Palette shall execute a subscription agreement and such other agreements, including a voting agreement and right of first refusal and co-sale agreement, as may be reasonably requested by Beam.

4.4. Royalties. Beam shall pay to Bio Palette royalties on Net Sales of Beam Licensed Products by Beam and its Affiliates, sublicensees and sublicensees' Affiliates, and Bio Palette shall pay to Beam royalties on Net Sales of Bio Palette Licensed Products by Bio Palette and its Affiliates, sublicensees and sublicensees' Affiliates, in each case, on a Licensed Product-by-Licensed Product and country-by-country basis during the applicable Royalty Term, at a royalty rate equal to [**]%. For the avoidance of doubt, (a) royalties shall be payable on Net Sales of a Beam Licensed Product by Beam and its Affiliates, sublicensees and sublicensees' Affiliates in a country after a Valid Claim of a Bio Palette Patent Covers such Beam Licensed Product in such country after the First Commercial Sale of such Beam Licensed Product even if such Beam Licensed Product was not Covered by a Valid Claim of a Bio Palette Patent [**] and (b) royalties shall be payable on Net Sales of a Bio Palette Licensed Product by Bio Palette and its Affiliates, sublicensees and sublicensees' Affiliates in a country [**].

4.5. Reports and Payment. During the Royalty Term for each Licensed Product, the applicable Licensee shall provide written unaudited reports to the applicable Licensor within [**] days after the end of each [**] covering sales of Licensed Products on a product-by-product, country-by-country basis in the Territory by such Licensee, its Affiliates, licensees, and sublicensees during such [**]. Each such written report shall provide (a) the Net Sales in Dollars and local currency for each Licensed Product in the Territory during the reporting period; (b) the deductions (by deduction category) from gross amounts billed or invoiced taken in calculating such Net Sales; (c) the royalties payable, in Dollars, which shall have accrued hereunder with respect to such Net Sales and (d) to the extent required under any Applicable In-License, the number of units of such Licensed Product(s) sold during the reporting period. In addition, each such written report shall contain such additional information as reasonably requested by such Licensor in order to satisfy such Licensor's reporting obligations to any In-Licensor. The information contained in each report under this Section 4.5 shall be considered Confidential Information of such Licensee, provided that such Licensor may share such report with the In-Licensors as necessary to comply with its obligations under the Applicable In-Licenses, subject to confidentiality and non-use restrictions at least as strict as those that apply to such Licensor's confidential information under such Applicable In-License. Concurrent with the delivery of each such report, such Licensee shall make the royalty payment due to such Licensor under Section 4.4 for the calendar quarter covered by such report. Each report to be delivered by a Licensee pursuant to this Section 4.5 shall be certified in writing on behalf of such Licensee as true, correct and complete in all material respects with respect to the information required solely to the extent the applicable Licensor is required to certify in writing that such information is true, correct and complete in a report delivered to an In-Licensor under an Applicable In-License. In addition, during the Royalty Term for each Licensed Product, within [**] days following the end of each [**], the applicable Licensee will provide the applicable Licensor a preliminary non-binding good faith report estimating the total Net Sales of, and royalties payable to such Licensor for, such Licensed Product projected for such [**], provided that such Licensee will have no liability as a result of any disparity between such reports and the reports delivered pursuant to the first sentence of this Section 4.5.

4.6. Payment Method; Late Payments. Payments hereunder, other than payments made in Beam Common Stock pursuant to Section 4.3, shall be paid by wire transfer, or electronic funds transfer (EFT) in immediately available funds to a bank account designated by the payee Party at least [**] days in advance of such payment. Royalties and any other payments required to be paid by either Party pursuant to this Agreement shall, if overdue, bear interest until payment at a rate *per annum* equal to the lesser of the prime or equivalent rate p*er annum* quoted by *The Wall Street Journal* (U.S. editions) on the first Business Day after such payment is due, plus [**] percent ([**]%) or, if lower, the highest rate permitted by applicable Law, calculated on the number of days such payments are paid after such payments are due and compounded [**]. The payment of such interest shall not restrict either Party from exercising any other rights it may have because any payment is overdue.

4.7. Currency. All amounts payable and calculations hereunder shall be in Dollars. Conversion of sales recorded in local currencies to Dollars will first be determined in the foreign currency of the country in which such Licensed Products are sold and then converted to Dollars at a ninety (90)-day trailing average published by the *Wall Street Journal* (U.S. editions) for conversion of the foreign currency into Dollars on the last day of the quarter for which such payment is due.

4.8. Taxes and Withholding. If a Licensee is required to deduct or withhold from any payment due to the applicable Licensor hereunder any withholding taxes under the Laws or regulations of any jurisdiction or Governmental Authority, then such Licensee shall pay such withholding taxes to the applicable Governmental Authority and make the payment to such Licensor of the net amount due after deduction or withholding of such taxes. Such withholding taxes shall be treated for all purposes of this Agreement as having been paid to such Licensor. The applicable Licensee shall submit reasonable proof of payment of the withholding taxes within a reasonable period of time after such withholding taxes are remitted to the Governmental Authority. The Parties shall reasonably cooperate to eliminate or minimize any such withholding taxes. Notwithstanding the foregoing, if a Licensee is required to deduct or withhold withholding taxes from any payment due hereunder that is required to be paid to an In-Licensor under an Applicable In-License (a "Pass-Through Amount"), then the Pass-Through Amount shall be treated as a separate payment and such Pass-Through Amount shall be increased so that the net amount thereof payable to the applicable Licensor, after the deduction of all withholding taxes directly related to such Pass-Through Amount, equals the Pass-Through Amount; provided, however, that such Licensor shall take all reasonable best efforts necessary to obtain any lawful reductions or eliminations of such withholding taxes available under Law. The applicable Licensee shall submit reasonable proof of payment of any withholding taxes within a reasonable period of time after such withholding taxes are remitted to the Governmental Authority.

4.9. Accounting.

4.9.1. Each Licensee agrees to keep, and to require its Affiliates, licensees, and sublicensees to keep, full, clear and accurate records for a minimum period of [**] years after the conclusion of the calendar year in which the relevant payment is owed pursuant to this Agreement, setting forth the sales and other disposition of Licensed Products sold or otherwise disposed of in sufficient detail to enable royalties and compensation payable to the applicable Licensor hereunder to be determined.

4.9.2. Each Licensee further agrees, upon not less than [**] days' prior written notice, to permit, and to require its Affiliates, licensees, and sublicensees to permit, the books and records relating to a Licensed Product to be examined by an independent accounting firm selected by the applicable Licensor for the purpose of verifying reports provided by such Licensee under this Agreement. Such audit shall not be performed more frequently than once in any [**]-month period or once with respect to any reporting period, and shall be conducted under appropriate confidentiality provisions, for the sole purpose of verifying the accuracy and completeness of all financial, accounting and numerical information and calculations provided under this Agreement. The independent accounting firm shall have reasonable access, on reasonable notice and during such Licensee's normal business hours to individuals, records and responses to questions from auditors in a timely manner and have the right to make copies of relevant portions of such Licensee's books and records, provided that any such copies shall be the Confidential Information of such Licensee, shall be protected by appropriate confidentiality obligations and shall not be shared with such Licensor or any other Person.

4.9.3. Such examination is to be made at the expense of the applicable Licensor, except if the results of the audit reveal an underpayment of royalties, milestones, or other payments to such Licensor under this Agreement of [**] percent ([**]) or more in any calendar year, in which case reasonable audit fees for such examination shall be paid by the applicable Licensee.

ARTICLE 5
INTELLECTUAL PROPERTY

5.1. Ownership of Intellectual Property. As between the Parties, subject to the respective license grants under Section 2.1, Beam shall own and retain all worldwide rights, title and interests in and to the Beam Patents and Bio Palette shall own and retain all worldwide rights, title and interests in and to the Bio Palette Patents. Any intellectual property arising out of activities under this Agreement will, as between the Parties, be owned by the Party inventing such intellectual property.

5.2. Filing, Prosecution and Maintenance of Patents.

5.2.1. Except as expressly set forth in this Section 5.2.1, as between the Parties, Bio Palette shall have the sole right to file, prosecute and maintain the Bio Palette Patents, in its sole discretion. Solely with respect to Bio Palette Patent [**] (including the divisional application thereof), and subject to Bio Palette's obligations under the Bio Palette In-License, Bio Palette shall give Beam the opportunity to provide comments on and make requests of Bio Palette concerning the prosecution and maintenance of such Patent and Bio Palette shall consider such comments and requests in good faith or, as applicable, provide such comments and requests to Kobe University under the Bio Palette In-License[**]. If, during the Term, Bio Palette intends to abandon such Patent in a particular country, then Bio Palette will notify Beam of such intention at least [**] days before such Patent will become abandoned, and, subject to the terms of the Bio Palette In-License, Beam will have the right, but not the obligation, to assume responsibility for the prosecution and maintenance thereof with counsel of its own choice. Bio Palette shall take such actions as reasonably requested by Beam, and shall otherwise reasonably cooperate with Beam, in connection with the transfer of such prosecution and maintenance responsibility to Beam.

5.2.2. As between the Parties, Beam shall have the sole right to file, prosecute and maintain the Beam Patents, in its sole discretion.

5.3. Enforcement of Patents.

5.3.1. Beam shall give Bio Palette notice of any infringement of any Bio Palette Patents that may come to Beam's attention, and Bio Palette shall give Beam notice of any infringement of any Beam Patents that may come to Bio Palette's attention.

5.3.2. Subject to the terms of the Bio Palette In-License, in the case of any infringement of a Bio Palette Patent [**] (including the divisional application thereof) by a Third Party that is developing or commercializing a product that is competitive with a Licensed Product in the Field in the Territory (other than a Licensed Product in the Microbiome Field in the Asia Territory), Beam may request that Bio Palette initiate and prosecute a legal action to enforce such Bio Palette Patent against such infringement, and the Parties shall discuss in good faith and strategize with respect to such possible legal action, provided that Bio Palette shall have the sole right, but not the obligation, to initiate and prosecute any such legal action and shall have the final decision-making authority with respect thereto.

5.3.3. Subject to the terms of the Bio Palette In-License, in the case of any infringement of Bio Palette Patent [**] (including the divisional application thereof) by a Third Party that is developing or commercializing a product that is competitive with a Licensed Product in the Field in the Territory (other than a Licensed Product in the Microbiome Field in the Asia Territory), Beam shall have the first right, but not the obligation, to initiate and prosecute any legal action to enforce such Bio Palette Patent against such infringement at its own expense and in the name of Beam and, if requested by Beam, in the name of Bio Palette, or to control the defense of any declaratory judgment action relating to any such infringement. For any such legal action, in the event that Beam is unable to initiate or prosecute such action solely in its own name, (a) Beam may request, at Beam's expense, that Bio Palette join such action voluntarily and execute and cause its Affiliates to execute all documents necessary for Beam to initiate litigation to prosecute and maintain such action, and Bio Palette will reasonably consider such request and (b) if necessary for Beam to initiate or prosecute such action solely in its own name, Bio Palette will use reasonable efforts to cause Kobe University to join such action. Beam shall decide whether to initiate and prosecute any legal action to enforce such Bio Palette Patent against such infringement and shall notify Bio Palette of its decision in writing within 90 days after Beam acknowledges such infringement. If Beam elects not to initiate and prosecute any legal action to enforce such Bio Palette Patent against such infringement, Bio Palette shall have the right, but not the obligation, to initiate and prosecute any legal action to enforce such Bio Palette Patent against such infringement at its own expense. Each Party shall have the right to be represented by counsel of its own choice, at its own expense. In connection with any such legal action, the Parties will cooperate fully and will provide each other with any information or assistance that either may reasonably request. Each Party shall keep the other Party reasonably informed of developments in any such legal action, including, to the extent permitted under applicable Law, consultation on any settlement, the status of any settlement negotiations and the terms of any offer related thereto.

5.3.4. Subject to the terms of the Beam In-Licenses, in the case of any infringement of a Beam Patent by a Third Party that is developing or commercializing a product that is competitive with a Licensed Product in the Microbiome Field in the Asia Territory, Bio Palette may request that Beam initiate and prosecute a legal action to enforce such Beam Patent against such infringement, and the Parties shall discuss in good faith and strategize with respect to such possible legal action, provided that Beam shall have the sole right, but not the obligation, to initiate and prosecute any such legal action and shall have the final decision-making authority with respect thereto.

5.3.5. As between the Parties, except as otherwise expressly set forth in this Section 5.3, each Party shall have the sole right, but not the obligation, to initiate and prosecute any legal action against an infringement of Patents owned or Controlled by such Party.

5.3.6. Any recovery obtained by a Party in connection with or as a result of any legal action contemplated by Section 5.3.2, Section 5.3.3 or Section 5.3.4, whether by settlement or otherwise, shall be shared in order as follows:

(a) each Party shall recoup all of its costs and expenses incurred in connection with such legal action, provided that, if such recovery is not sufficient for each Party recoup all such costs and expenses, the Parties shall be reimbursed *pro rata* for such costs and expenses; and

(b) the amount of any recovery remaining shall then be allocated between the Parties on a *pro rata* basis taking into consideration the relative economic losses suffered by each Party.

5.4. Defense of Patents.

5.4.1. As between the Parties, Bio Palette shall have the sole right to defend against any suits or actions initiated by a Third Party challenging any Bio Palette Patents; [**]. Bio Palette shall provide Beam with an opportunity to review and comment on any filings or communications with respect to such suit or action with respect to such Bio Palette Patent, and to participate in any proceedings with respect thereto through counsel of Beam's choosing, at Beam's sole expense. Bio Palette shall not settle any such suit or action with respect to such Bio Palette Patent without Beam's prior written consent, not to be unreasonably withheld, conditioned or delayed.

5.4.2. As between the Parties, Beam shall have the sole right to defend against any suits or actions initiated by a Third Party challenging any Beam Patents.

5.5. Patent Term Restoration. The Parties agree to cooperate and to take reasonable actions to maximize the protections available under the safe harbor provisions of 35 U.S.C. 103(c) for U.S. patents and patent applications; provided that, Beam shall have the sole right to apply for patent term restoration or supplemental protection certificates or their equivalent with respect to the Beam Patents and Bio Palette shall have the sole right to apply for patent term restoration or supplemental protection certificates or their equivalent with respect to the Bio Palette Patents. The Parties shall cooperate with each other, including to provide necessary information and assistance as the other Party may reasonably request, in obtaining patent term restoration or supplemental protection certificates or their equivalents in any country in the Territory where applicable to Beam Patents or Bio Palette Patents.

ARTICLE 6
CONFIDENTIALITY

6.1. Confidentiality; Exceptions. Except to the extent expressly authorized by this Agreement or otherwise agreed in writing, the Parties agree that the receiving Party (the "Receiving Party") shall keep confidential and shall not publish or otherwise disclose or use for any purpose other than as provided for in this Agreement any confidential and proprietary information and materials, patentable or otherwise, in any form (written, oral, photographic, electronic, magnetic, or otherwise) which is disclosed to it by the other Party (the "Disclosing

Party") or otherwise received or accessed by a Receiving Party in the course of performing its obligations or exercising its rights under this Agreement, including trade secrets, know-how, inventions or discoveries, proprietary information, formulae, processes, techniques or information relating to a Party's past, present or future marketing, financial or Development activities with respect to any product or potential product, or useful technology of the Disclosing Party or the pricing thereof (collectively, "Confidential Information"), except to the extent that it can be established by the Receiving Party that such Confidential Information:

6.1.1. was in the lawful knowledge and possession of the Receiving Party prior to the time it was disclosed to, or learned by, the Receiving Party, or was otherwise developed independently by the Receiving Party, as evidenced by written records kept in the ordinary course of business, or other documentary proof of actual use by the Receiving Party;

6.1.2. was generally available to the public or otherwise part of the public domain at the time of its disclosure to the Receiving Party;

6.1.3. became generally available to the public or otherwise part of the public domain after its disclosure and other than through any act or omission of the Receiving Party in breach of this Agreement; or

6.1.4. was disclosed to the Receiving Party, other than under an obligation of confidentiality, by a Third Party who had no obligation to the Disclosing Party not to disclose such information to others.

6.2. Authorized Disclosure. Except as expressly provided otherwise in this Agreement, a Receiving Party may use and disclose Confidential Information of the Disclosing Party as follows: (a) under appropriate confidentiality provisions similar to those in this Agreement, in connection with the performance of its obligations or exercise of rights granted or reserved in this Agreement (including the rights to Develop and Commercialize Licensed Products and to grant sublicenses as permitted hereunder); or (b) to the extent such disclosure is reasonably necessary in filing or prosecuting patent, copyright and trademark applications, prosecuting or defending litigation, complying with applicable governmental regulations, seeking and obtaining Regulatory Approval, conducting non-clinical activities or Clinical Trials, preparing and submitting INDs to Regulatory Authorities, or is otherwise required by Law or the rules of a recognized stock exchange or automated quotation system applicable to such Party; provided, however, that if a Receiving Party is required by Law to make any such disclosure of a Disclosing Party's Confidential Information it will, except where impracticable, give reasonable advance notice to the Disclosing Party of such disclosure requirement and, if requested by the Disclosing Party, cooperate with the Disclosing Party to secure confidential treatment of such Confidential Information required to be disclosed; or (c) in communication with existing or prospective investors, acquirers, consultants or advisors, on a need-to-know basis, in each case under appropriate confidentiality provisions substantially equivalent to those of this Agreement; or (d) to the extent mutually agreed to in writing by the Parties.

6.3. Press Releases; Disclosure of Agreement; Publicity. The Parties shall reasonably cooperate and mutually agree on an initial press release to be published jointly by the Parties regarding the execution of this Agreement. Neither Party shall issue or cause the publication of any other press release or public announcement regarding the terms of this Agreement without the express prior approval of the other Party other than as required by Law or the rules of any stock exchange, provided that if any such publication, press release or public announcement is required by Law, the Party obligated to make such publication, press release or public announcement shall, if practicable, notify the other Party in advance thereof and reasonably consider any timely comments from such other Party, including any reasonable request to limit such publication, press release or public announcement. Upon Bio Palette's reasonable request, Beam will reasonably participate in public relations efforts in Japan relating to the execution of this Agreement or the Patents licensed under this Agreement.

6.4. Use of Names. Neither Party shall use the name, symbol, trademark, trade name or logo of the other Party or its Affiliates or In-Licensors in any press release, publication or other form of public disclosure without the prior written consent of the other Party.

6.5. Termination of Prior Agreement. This Agreement supersedes and replaces the Confidentiality Agreement by and between the Parties dated as of May 1, 2018 (the "Existing Confidentiality Agreement"). All information exchanged between the Parties under the Existing Confidentiality Agreement shall be deemed Confidential Information of the respective Disclosing Party hereunder and shall be subject to the terms of this Article 6.

6.6. Remedies. Each Party shall be entitled to seek, in addition to any other right or remedy it may have, at Law or in equity, a temporary injunction, without the posting of any bond or other security, enjoining or restraining the other Party from any violation or threatened violation of this Article 6.

ARTICLE 7
REPRESENTATIONS, WARRANTIES AND COVENANTS

7.1. Representations and Warranties of Both Parties. Each Party hereby represents and warrants to the other Party, as of the Effective Date, that:

7.1.1. such Party is duly organized, validly existing and in good standing under the Laws of the jurisdiction of its incorporation and has full corporate power and authority to enter into this Agreement and to carry out the provisions hereof;

7.1.2. such Party has taken all necessary action on its part to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder;

7.1.3. this Agreement has been duly executed and delivered on behalf of such Party, and constitutes a legal, valid, binding obligation, enforceable against it in accordance with the terms hereof;

7.1.4. the execution, delivery and performance of this Agreement by such Party does not conflict with any agreement or any provision thereof, or any instrument or understanding, oral or written, to which it is a party or by which it is bound, nor violate any law or regulation of any court, governmental body or administrative or other agency having jurisdiction over such Party; and

7.1.5. no authorization, consent, approval, license, exemption of or filing or registration with any court or governmental department, commission, board, bureau, agency or instrumentality, domestic or foreign, under any applicable Laws currently in effect, is or will be necessary for, or in connection with, the transactions contemplated by this Agreement or any other agreement or instrument executed in connection herewith, or for the performance by it of its obligations under this Agreement and such other agreements except as may be required to conduct Clinical Trials or to seek or obtain Regulatory Approvals.

7.2. Additional Representations and Warranties of Bio Palette. Bio Palette hereby represents and warrants to Beam, as of the Effective Date that, except as Bio Palette has disclosed to Beam in Schedule 7.2:

7.2.1. Bio Palette is the sole and exclusive owner of, or has Control via a license from the In-Licensors to, the Bio Palette Patents;

7.2.2. Bio Palette has the right to grant all rights and licenses it purports to grant to Beam under this Agreement;

7.2.3. Bio Palette has not granted any right or license to any Third Party relating to any of the Bio Palette Patents that conflicts or interferes with any of the rights or licenses granted hereunder with respect to the Bio Palette Patents;

7.2.4. Bio Palette does not have any rights under any Patents licensed to Bio Palette under the Bio Palette In-License, other than the Bio Palette Patents;

7.2.5. To its knowledge, the Bio Palette Patents that have been issued as patents as of the Effective Date are valid and enforceable and Bio Palette has complied (and, to its knowledge, Kobe University has complied) with all Laws and duties of candor with respect to the filing, prosecution and maintenance of the Bio Palette Patents. Bio Palette has paid (with respect to Bio Palette Patents for which it is responsible for prosecution and maintenance) and, to Bio Palette's knowledge, the In-Licensors have paid (with respect to Bio Palette Patents for which the In-Licensors are responsible for prosecution and maintenance) all maintenance and annuity fees with respect to the Bio Palette Patents due as of the Effective Date. Except as identified in Schedule 7.2, no action or proceeding regarding inventorship of a Bio Palette Patent has been brought or threatened in writing;

7.2.6. It has not received written notice of any claims, and there are no judgments or settlements against or owed by Bio Palette, or to the knowledge of Bio Palette, any pending or threatened claims or litigation, in each case relating to the Bio Palette Patents;

7.2.7. Bio Palette has provided to Beam true and correct copies of the Bio Palette In-License in its current form, which Bio Palette In-License is in full force and effect; Bio Palette is not in material breach and, to its knowledge, Kobe University is not in material breach of the Bio Palette In-License; and Bio Palette has not received any notice of breach of the Bio Palette In-License;

7.2.8. Other than any amounts that may be due to Kobe University as a result of granting a third party a non-exclusive sublicense to the Patents (as such term is defined in the Bio Palette In-License) pursuant to Section 3 and Section 4 of Article 5 (Licensing Fees) of the Bio Palette In-License, no payments will be owed to a Third Party by Bio Palette or its Affiliates under the Bio Palette In-License due to Development, Manufacturing or Commercialization activities for a Beam Licensed Product under this Agreement; and

7.2.9. Kobe University is not subject to a Third Party public or private funding agreement that would restrict Bio Palette's right to grant sublicenses under the rights granted by Kobe University to Bio Palette under the Bio Palette In-License.

7.3. Additional Representations and Warranties of Beam. Beam hereby represents and warrants to Bio Palette, as of the Effective Date that, except as Beam has disclosed to Bio Palette in Schedule 7.3:

7.3.1. Beam is the sole and exclusive owner of, or has Control via a license from the In-Licensors to, the Beam Patents;

7.3.2. Beam has the right to grant all rights and licenses it purports to grant to Bio Palette under this Agreement;

7.3.3. Beam has not granted any right or license to any Third Party relating to any of the Beam Patents that conflicts or interferes with any of the rights or licenses granted hereunder with respect to the Beam Patents;

7.3.4. Beam does not have any rights under any Patents licensed to Beam under the Beam In-Licenses, other than the Beam Patents, except for those Patents set forth on Schedule 7.3;

7.3.5. To its knowledge, the Beam Patents that have been issued as patents as of the Effective Date are valid and enforceable and Beam has complied (and, to its knowledge, the applicable In-Licensors have complied) with all Laws and duties of candor with respect to the filing, prosecution and maintenance of the Beam Patents. Beam has paid (with respect to Beam Patents for which it is responsible for prosecution and maintenance) and, to Beam's knowledge, the In-Licensors have paid (with respect to Beam Patents for which the In-Licensors are responsible for prosecution and maintenance) all maintenance and annuity fees with respect to the Beam Patents due as of the Effective Date. Except as identified in Schedule 7.3, no action or proceeding regarding inventorship of a Beam Patent has been brought or threatened in writing;

7.3.6. It has not received written notice of any claims, and there are no judgments or settlements against or owed by Beam, or to the knowledge of Beam, any pending or threatened claims or litigation, in each case relating to the Beam Patents; and

7.3.7. Beam has provided to Bio Palette true and correct copies of all Beam In-Licenses in their current form, which Beam In-Licenses are in full force and effect; Beam is not in material breach and, to its knowledge, none of the In-Licensors are in material breach of the Beam In-Licenses; and Beam has not received any notice of breach of the Beam In-Licenses.

7.4. Additional Covenants of Bio Palette. Bio Palette agrees that, during the Term:

7.4.1. Bio Palette will, and will cause its Affiliates to, (i) perform and comply in all material respects with all terms and conditions of the Bio Palette In-License, (ii) not enter into or amend any agreement with any Third Party, including Kobe University, which amendment or agreement materially adversely affects the rights granted to Beam hereunder or Bio Palette's ability to fully perform its obligations hereunder; and (iii) promptly furnish Beam with copies of all amendments to the Bio Palette In-License executed following the Effective Date that directly relate to (A) the rights granted to Beam under this Agreement and (B) the Field (which, in each case, Bio Palette may redact as necessary to protect confidential or commercially sensitive information);

7.4.2. Bio Palette shall promptly notify Beam in the event of the termination of the Bio Palette In-License and shall use Commercially Reasonable Efforts to assist Beam in obtaining a direct license from Kobe University if available pursuant to, and in accordance with, the sublicense survival terms of the Bio Palette In-License;

7.4.3. Bio Palette shall take all actions (including the payment of all amounts) necessary to renew the Bio Palette In-License no later than [**] days prior to the end of each license period thereunder, and shall provide to Beam prompt written notice of such renewal;

7.4.4. Bio Palette shall promptly (but in any event no later than [**]Business Days of Bio Palette becoming aware) notify Beam of any actual or alleged breach by Bio Palette of the Bio Palette In-License or the occurrence of any other event that would likely give rise to a termination right of Kobe University under the Bio Palette In-License;

7.4.5. Without Beam's prior written consent, Bio Palette shall not consent to any sale or other transfer by Kobe University of any of the Bio Palette Patents;

7.4.6. Without Beam's prior written consent, Bio Palette shall not change any course of dealing with Kobe University under the Bio Palette In-License; and

7.4.7. Starting promptly following the Effective Date, Bio Palette shall use reasonable efforts to negotiate and enter into an amendment to the Bio Palette In-License in a form reasonably acceptable to Beam, which amendment shall include provisions reasonably requested by Beam, including the addition of an express right of Bio Palette to grant sublicenses through multiple tiers without Kobe University's consent or an express right of Beam, as Bio Palette's sublicensee, to grant further sublicenses through multiple tiers without Kobe University's consent.

7.5. Additional Covenants of Beam. Beam agrees that, during the Term:

7.5.1. Beam will, and will cause its Affiliates to, (i) perform and comply in all material respects with all terms and conditions of Beam In-Licenses, (ii) not enter into or amend any agreement with any Third Party, including the In-Licensors, which amendment or agreement materially adversely affects the rights granted to Bio Palette hereunder or Beam's ability to fully perform its obligations hereunder; and (iii) promptly furnish Bio Palette with copies of all amendments to the Beam In-Licenses executed following the Effective Date that directly relate to (A) the rights granted to Bio Palette under this Agreement and (B) the Microbiome Field (which, in each case, Beam may redact as necessary to protect confidential or commercially sensitive information);

7.5.2. Beam shall promptly notify Bio Palette in the event of the termination of any Beam In-License and shall use Commercially Reasonable Efforts to assist Bio Palette in obtaining a direct license from the applicable In-Licensor if available pursuant to, and in accordance with, the sublicense survival terms of such Beam In-License;

7.5.3. [**]; and

7.5.4. Beam shall timely pay all maintenance fees required to be paid under the Beam In-Licenses.

7.6. Disclaimer. Except as otherwise expressly set forth in this Agreement, NEITHER PARTY MAKES ANY REPRESENTATION OR EXTENDS ANY WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY THAT ANY PATENTS ARE VALID OR ENFORCEABLE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. Without limiting the generality of the foregoing, except as otherwise expressly set forth in this Agreement, each Party disclaims any warranties with regards to: (a) the safety or usefulness for any purpose of the technology or materials it provides or discovers under this Agreement; or (b) the validity, enforceability, or non-infringement of any intellectual property rights or technology it provides or licenses to the other Party under this Agreement.

ARTICLE 8
INDEMNIFICATION; INSURANCE

8.1. Indemnification by Beam. Beam shall indemnify, defend and hold harmless Bio Palette and its Affiliates, and its or their respective directors, officers, employees and agents, (each, an "Bio Palette Indemnitee") from and against any and all liabilities, damages, losses, costs and expenses, including the reasonable fees of attorneys and other professional Third Parties (collectively, "Losses"), arising out of or resulting from any and all Third Party suits, claims, actions, proceedings or demands ("Claims") based upon:

8.1.1. the negligence, recklessness or wrongful intentional acts or omissions of Beam or its Affiliates or its or their respective directors, officers, employees and agents in connection with Beam's performance of its obligations or exercise of its rights under this Agreement;

8.1.2. any breach of any representation or warranty or express covenant made by Beam under Article 7 or any other provision under this Agreement;

8.1.3. failure by Beam to comply with any Law; or

8.1.4. any Development of a Licensed Product conducted by or on behalf of Beam, its Affiliates or sublicensees, or any Manufacture or Commercialization by Beam, its Affiliates, licensees or sublicensees of any Licensed Product, but excluding the infringement or misappropriation of any patent or other intellectual property rights of any Third Party arising out of the practice of a Bio Palette Patent;

except, in each case, to the extent any such Losses or Claims are subject to indemnification by Bio Palette under Section 8.2.

8.2. Indemnification by Bio Palette. Bio Palette shall indemnify, defend and hold harmless Beam and its Affiliates, and its or their respective directors, officers, employees and agents (each, and "Beam Indemnitee"), from and against any and all Losses, arising out of or resulting from any and all Claims based upon:

8.2.1. the negligence, recklessness or wrongful intentional acts or omissions of Bio Palette or its Affiliates or its or their respective directors, officers, employees and agents, in connection with Bio Palette's performance of its obligations or exercise of its rights under this Agreement;

8.2.2. any breach of any representation or warranty or express covenant made by Bio Palette under Article 7 or any other provision under this Agreement;

8.2.3. failure by Bio Palette to comply with any Law; or

8.2.4. any Development of a Licensed Product conducted by or on behalf of Bio Palette, its Affiliates or sublicensees, or any Manufacture or Commercialization by Bio Palette, its Affiliates, licensees or sublicensees of any Licensed Product, but excluding the infringement or misappropriation of any patent or other intellectual property rights of any Third Party arising out of the practice of a Beam Patent;

except, in each case, to the extent any such Losses or Claims are subject to indemnification by Beam under Section 8.1.

8.3. Procedure. A Person entitled to indemnification under this Article 8 (an "Indemnified Party") shall give prompt written notification to the Person from whom indemnification is sought (the "Indemnifying Party") of the commencement of any action, suit or proceeding relating to a Third Party claim for which indemnification may be sought or, if earlier, upon the assertion of any such claim by a Third Party (it being understood and agreed, however, that the failure by an Indemnified Party to give notice of a Third Party claim as provided in this Section 8.3 shall not relieve the Indemnifying Party of its indemnification obligation under this Agreement except and only to the extent that such Indemnifying Party is actually damaged as a result of such failure to give notice). Within [**] days after delivery of such notification, the Indemnifying Party may, upon written notice thereof to the Indemnified Party, assume control of the defense of such action, suit, proceeding or claim with counsel reasonably satisfactory to the Indemnified Party. If the Indemnifying Party does not assume control of such defense, the Indemnified Party shall control such defense and, without limiting the Indemnifying Party's indemnification obligations, the Indemnifying Party shall reimburse the Indemnified Party for all costs and expenses, including attorney fees, reasonably incurred by the Indemnified Party in defending itself within [**] days after receipt of any invoice therefor from the Indemnified Party. The Party not controlling such defense may participate therein at its own expense; provided that,

if the Indemnifying Party assumes control of such defense and the Indemnified Party in good faith concludes, based on advice from counsel, that the Indemnifying Party and the Indemnified Party have conflicting interests with respect to such action, suit, proceeding or claim, the Indemnifying Party shall be responsible for the reasonable fees and expenses of one counsel to the Indemnified Party in connection therewith. The Party controlling such defense shall keep the other Party advised of the status of such action, suit, proceeding or claim and the defense thereof and shall consider recommendations made by the other Party with respect thereto. The Indemnified Party shall not agree to any settlement of such action, suit, proceeding or claim without the prior written consent of the Indemnifying Party, which shall not be unreasonably withheld, delayed or conditioned. The Indemnifying Party shall not agree to any settlement of such action, suit, proceeding or claim or consent to any judgment in respect thereof that does not include a complete and unconditional release of the Indemnified Party from all liability with respect thereto, that imposes any liability or obligation on the Indemnified Party or that acknowledges fault by the Indemnified Party without the prior written consent of the Indemnified Party.

8.4. Insurance. Each Party shall maintain, at its cost, insurance against liability and other risks associated with its activities and obligations under this Agreement, including its indemnification obligations hereunder, in such amounts, subject to such deductibles and on such terms as are customary for the activities to be conducted by it under this Agreement and as are consistent with the requirements of the Applicable In-Licenses. Each Party shall furnish to the other Party evidence of such insurance upon request and add any additional insured as may be contemplated by the Applicable In-Licenses.

8.5. LIMITATION OF LIABILITY. EXCEPT FOR A BREACH OF ARTICLE 6 OR FOR CLAIMS OF A THIRD PARTY THAT ARE SUBJECT TO INDEMNIFICATION UNDER THIS ARTICLE 8, NEITHER BIO PALETTE NOR BEAM, NOR ANY OF THEIR RESPECTIVE AFFILIATES, LICENSEES OR SUBLICENSEES, WILL BE LIABLE TO THE OTHER PARTY TO THIS AGREEMENT, ITS AFFILIATES OR ANY OF THEIR LICENSEES OR SUBLICENSEES FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL OR PUNITIVE DAMAGES OR LOST PROFITS OR ROYALTIES, LOST DATA OR COST OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, WHETHER LIABILITY IS ASSERTED IN CONTRACT, TORT (INCLUDING NEGLIGENCE AND STRICT PRODUCT LIABILITY), INDEMNITY OR CONTRIBUTION, AND IRRESPECTIVE OF WHETHER THAT PARTY OR ANY REPRESENTATIVE OF THAT PARTY HAS BEEN ADVISED OF, OR OTHERWISE MIGHT HAVE ANTICIPATED THE POSSIBILITY OF, ANY SUCH LOSS OR DAMAGE.

ARTICLE 9
TERM AND TERMINATION

9.1. Term. This Agreement is effective as of the Effective Date and, unless earlier terminated by a Party in accordance with Section 9.2, 9.3, 9.4 or 9.5, shall expire on a Licensed Product-by-Licensed Product and country-by-country basis upon the expiration of the Royalty Term with respect to such Licensed Product in such country (the "Term").

9.2. Termination at Will. Either Party shall have the right, at its sole discretion, exercisable at any time during the Term, to terminate this Agreement solely with respect to the license granted to such Party under Section 2.1 (and, for clarity, not with respect to the license granted to the other Party under Section 2.1), upon [**] days' prior written notice to the other Party.

9.3. Termination for Material Breach. Either Party (the "Non-Breaching Party") may, without prejudice to any other remedies available to it under applicable Law or in equity, terminate this Agreement with respect to the license granted to the other Party (the "Breaching Party") under Section 2.1 (but may, for clarity, retain the license granted to the Non-Breaching Party under Section 2.1) if the Breaching Party shall have materially breached this Agreement, and such material breach shall have continued for [**] days (or, in the case of a payment breach by the Breaching Party, [**] days) after written notice thereof was provided to the Breaching Party by the Non-Breaching Party, such notice describing the alleged breach. Any such termination of this Agreement under this Section 9.3 shall become effective at the end of such [**]-day or [**]-day (as applicable) cure period, unless the Breaching Party has cured such breach prior to the expiration of such cure period, or if such breach is not susceptible to cure within such cure period even with the use of Commercially Reasonable Efforts, the Non-Breaching Party's right to termination shall be suspended only if and for so long as the Breaching Party has provided to the Non-Breaching Party a written plan that is reasonably calculated to effect a cure, such plan is acceptable to the Non-Breaching Party, and the Breaching Party commits to and does carry out such plan; provided that in no event shall such extension of the Breaching Party's right to cure extend beyond [**] days after the expiration of the original cure period. The right of either Party to terminate this Agreement as provided in this Section 9.3 shall not be affected in any way by such Party's waiver or failure to take action with respect to any previous breach.

9.4. Termination for Patent Challenge. In the event of a Patent Challenge by either Party (the "Challenging Party") or any of its Affiliates or sublicensees, the other Party (the "Non-Challenging Party") shall be entitled to terminate this Agreement with respect to the license granted to the Challenging Party under Section 2.1 (but may, for clarity, retain the license granted to the Non-Challenging Party under Section 2.1), immediately upon written notice to the Challenging Party. Notwithstanding the foregoing, if a sublicensee of the Challenging Party initiates a Patent Challenge and the applicable In-Licensors have agreed or agree that the Challenging Party may terminate its sublicense with such sublicensee within a certain period of time and thereafter not be subject to termination of this Agreement with respect to the license granted to the Challenging Party under Section 2.1 as a result of the relevant Patent Challenge, then the Non-Challenging Party will not have the right to terminate this Agreement pursuant to this Section 9.4 on account of a Patent Challenge by such sublicensee if the Challenging Party terminates its sublicense with such sublicensee within such time period. For the avoidance of doubt, any participation by a Party, any of its Affiliates or sublicensees or its or their employees in any claim, challenge or proceeding that such Party, such Affiliates or sublicensees or such employees are required to participate in pursuant to a subpoena or court order or participates in a proceeding that is initiated by a patent office and not at the instigation of such Party, such Affiliates or sublicensees or such employees shall not constitute a Patent Challenge under this Section 9.4 and shall not give rise to the other Party's right to terminate any license hereunder.

9.5. Bankruptcy. Either Party may terminate the Agreement if the other Party makes a voluntary or involuntary general assignment of its assets for the benefit of creditors, a petition in bankruptcy is filed by or against the other Party and is not dismissed in [**] days, or a receiver or trustee is appointed for all or any part of the other Party's property.

9.6. Consequences of Termination.

9.6.1. Accrued Obligations. Expiration or termination of this Agreement for any reason shall not release any Party of any obligation or liability which, at the time of such expiration or termination, has already accrued or which is attributable to a period prior to such expiration or termination.

9.6.2. Termination of Rights. If this Agreement is terminated with respect to a license granted by one Party to the other Party under Section 2.1, all rights and licenses granted by the Continuing Party to the Non-Continuing Party hereunder shall immediately terminate; provided that any sublicense by the Non-Continuing Party under any sublicense or license granted by the Continuing Party to the Non-Continuing Party under this Agreement will, at the sublicensee's written election delivered to the Continuing Party within [**] days of the Non-Continuing Party being provided with written notice or having knowledge of such termination, and to the extent permitted under the Applicable In-Licenses, survive such termination on the condition that (a) the relevant sublicensee is not, at the time of such termination, in material breach of any of its obligations under such sublicense and (b) all amounts owed, as of the date of termination of this Agreement, by the Non-Continuing Party to the Continuing Party or the In-Licensors hereunder have been paid in full. In order to effect this provision, at the request of the sublicensee, the Continuing Party shall use Commercially Reasonable Efforts, in good faith, to enter into a direct license with the sublicensee on substantially the same terms as the sublicense to the extent such terms relate to the sublicensed technology; provided that (i) the financial terms of such direct license will be the same terms as set forth in this Agreement with respect to the sublicensed technology, (ii) the applicable sublicensee shall pay all amounts that, but for the termination of this Agreement, would have become payable by the Non-Continuing Party or such sublicensee to the Continuing Party or the In-Licensors pursuant to this Agreement prior to the date upon which the Continuing Party and such sublicensee enter into such direct license; provided that, in the event that more than one sublicense had been granted by the Non-Continuing Party prior to the date of such termination and more than one such sublicensee has elected to enter into a direct license with the Continuing Party pursuant to this Section 9.6.2, then the total amount payable to the Continuing Party pursuant to this clause (ii) shall be appropriately allocated among such sublicensees so that the Continuing Party does not receive from such sublicensees an aggregate amount that is more than the amount owed to it by the Non-Continuing Party pursuant to this Agreement prior to such termination, (iii) the Continuing Party will not be required to undertake obligations in addition to those required by this Agreement and (iv) the Continuing Party's rights under such direct license will be consistent with its rights under this Agreement, taking into account the scope of the license granted under such direct license; provided, further, that in no case shall the Continuing Party be required to negotiate with such sublicensee for a direct license for more than [**] days from the date of the sublicensee's notice of its intent to enter into a direct license.

9.7. Non-Exclusive Remedy. Termination of this Agreement by a Party shall be without prejudice to other remedies such Party may have at law or equity.

9.8. Survival. In addition to this Section 9.8, the following provisions, as well as any other provisions which by their nature are intended to survive termination or expiration, shall survive expiration or termination of this Agreement and continue to be enforceable: Article 1 (Definitions and Interpretation); Section 2.3 (No Implied Licenses); Section 4.5 (Reports and Payment) through Section 4.9 (Accounting) (solely with respect to amounts accruing prior to the effective date of such termination or expiration); Section 5.1 (Ownership of Intellectual Property); Section 5.2.2; Section 5.3.5; Article 6 (Confidentiality); Section 7.6 (Disclaimer); Section 8.1 (Indemnification by Beam); Section 8.2 (Indemnification by Bio Palette); Section 8.3 (Procedure); Section 8.5 (Limitation of Liability); 9.6 (Consequences of Termination); Section 9.7 (Non-Exclusive Remedy); and Article 10 (Miscellaneous).

ARTICLE 10
MISCELLANEOUS

10.1. Escalation. If a dispute between the Parties arises under this Agreement, either Party shall have the right to refer such dispute in writing to the respective Executive Officers, and such Executive Officers shall attempt in good faith to resolve such dispute. If the Parties are unable to resolve a given dispute pursuant to this Section 10.1 within [**] days after referring such dispute to the Executive Officers, either Party may have the given dispute settled by binding arbitration pursuant to Section 10.2.

10.2. Arbitration. If a Party intends to begin an arbitration to resolve a dispute arising under this Agreement, such Party shall provide written notice (the "Arbitration Request") to the other Party of such intention and a statement of the issues for resolution. From the date of the Arbitration Request and until such time as the dispute has become finally settled, the running of the time periods as to which Party must cure a breach of this Agreement becomes suspended as to any breach that is the subject matter of the dispute.

10.2.1. Additional Issues. Within [**] days after the receipt of the Arbitration Request, the other Party may, by written notice, add additional issues for resolution in a statement of counter-issues.

10.2.2. No Arbitration of Patent Issues. Any dispute, controversy or claim under this Agreement relating to the scope, validity, enforceability or infringement of any Patent Covering the manufacture, use, importation, offer for sale or sale of Licensed Products shall be submitted to a court of competent jurisdiction in the country in which such Patent was granted or arose.

10.2.3. Arbitration Procedure. Any arbitration pursuant to this Section 10.2 will be conducted in the English language and will be held in New York, NY, United States, unless another location is mutually agreed by the Parties. The arbitration will be governed by the United States Arbitration Act, 9 U.S.C. §§ 1-16, to the exclusion of any inconsistent state Law. The Parties shall mutually agree on the rules to govern discovery and the rules of evidence for the arbitration within [**] days after the Arbitration Request. If the Parties fail to timely agree to such rules, the United States Federal Rules of Civil Procedure will govern discovery and the United States Federal Rules of Evidence will govern evidence for the arbitration. The arbitration will be conducted by a single arbitrator knowledgeable in the subject matter at issue in the dispute and acceptable to both Parties,

provided that the Parties may by mutual agreement elect to have the arbitration conducted by a panel of three (3) arbitrators. If the Parties fail to agree on a mutually acceptable arbitrator within [**] days after the Arbitration Request, then the arbitrator shall be selected by the Boston, MA office of the AAA. The arbitrator may proceed to an award, notwithstanding the failure of either Party to participate in the proceedings. The arbitrator shall, within [**] days after the conclusion of the arbitration hearing, issue a written award and statement of decision describing the essential findings and conclusions on which the award is based, including the calculation of any damages awarded. The arbitrator shall be limited in the scope of his or her authority to resolving only the specific matter which the Parties have referred to arbitration for resolution and shall not have authority to render any decision or award on any other issues. Subject to Section 8.5, the arbitrator shall be authorized to award compensatory damages, but shall not be authorized to award punitive, special, consequential, or any other similar form of damages, or to reform, modify or materially change this Agreement. The arbitrator also shall be authorized to grant any temporary, preliminary or permanent equitable remedy or relief the arbitrator deems just and equitable and within the scope of this Agreement, including an injunction or order for specific performance. The award of the arbitrator shall be the sole and exclusive remedy of the Parties, except for those remedies that are set forth in this Agreement or which apply to a Party by operation of the applicable provisions of this Agreement, and the Parties hereby expressly agree to waive the right to appeal from the decisions of the arbitrator, and there shall be no appeal to any court or other authority (government or private) from the decision of the arbitrator. Judgment on the award rendered by the arbitrator may be enforced in any court having competent jurisdiction thereof.

10.2.4. Costs. Each Party shall bear its own attorneys' fees, costs, and disbursements arising out of the arbitration, and shall pay an equal share of the fees and costs of the arbitrator; provided, however, that the arbitrator, in his or her award, shall be authorized to determine whether a Party is the prevailing Party, and if so, to award to that prevailing Party reimbursement for its reasonable attorneys' fees, costs and disbursements (including, for example, expert witness fees and expenses, transcripts, photocopy charges and travel expenses).

10.2.5. Preliminary Injunctions. Notwithstanding anything in this Agreement to the contrary, a Party may seek a temporary restraining order or a preliminary injunction from any court of competent jurisdiction in order to prevent immediate and irreparable injury, loss, or damage on a provisional basis, pending the award of the arbitrator on the ultimate merits of any dispute.

10.2.6. Confidentiality. All proceedings and decisions of the arbitrator shall be deemed Confidential Information of each of the Parties, and shall be subject to Article 6.

10.3. Governing Law. This Agreement and any dispute arising from the performance or breach hereof shall be governed by and construed and enforced in accordance with the Laws of the State of New York without reference to conflicts of laws principles, provided that, with respect to matters involving the enforcement of intellectual property rights, the Laws of the country of the intellectual property rights at issue shall apply. The provisions of the United Nations Convention on Contracts for the International Sale of Goods shall not apply to this Agreement or any subject matter hereof.

10.4. Assignment. Neither Party may assign this Agreement without the consent of the other Party, except as otherwise provided in this Section 10.4. Either Party may assign this Agreement in whole or in part to any Affiliate of such Party without the consent of the other Party, provided that such assigning Party provides the other Party with written notice of such assignment and the assignee agrees in writing to assume performance of all assigned obligations. Further, each Party may assign this Agreement, and all of its rights and obligations, without the consent of the other Party to its successor in interest by way of merger, acquisition, or sale of all or substantially all of its business or assets to which this Agreement relates, provided that such assigning Party provides the other Party with written notice of such assignment and the assignee agrees in writing to assume performance of all assigned obligations. If any assignment of this Agreement by a Party (or its Affiliate) to an Affiliate would result in withholding taxes that did not exist prior to such assignment (*e.g.*, through a change in such assigning entity's jurisdiction of incorporation or residence for tax purposes), then the amount of any payment by such Affiliate hereunder shall be increased so that the net amount payable to the other Party after the deduction of all incremental withholding taxes incurred as a result of such assignment equals the amount of the payment that would otherwise have been payable but for such assignment. The terms of this Agreement shall be binding upon and shall inure to the benefit of the successors, heirs, administrators and permitted assigns of the Parties. Any purported assignment in violation of this Section 10.4 shall be null and void. If a Party assigns this Agreement in whole or in part to an Affiliate or Third Party as permitted by this Section 10.4, (x) the assigning Party shall thereafter remain liable for the performance by such assignee of all of such Party's financial obligations hereunder and the other Party may enforce such financial obligations against the assigning Party without first seeking to obtain performance from the assignee or exercising any other remedy or right that the enforcing Party may have and (y) the assigning Party shall thereafter remain liable for causing such assignee to perform all of the assigning Party's non-financial obligations hereunder.

10.5. Performance Warranty. Each Party hereby acknowledges and agrees that it shall be responsible for the full and timely performance as and when due under, and observance of all the covenants, terms, conditions and agreements set forth in, this Agreement by its Affiliate(s), licensees and sublicensees.

10.6. Force Majeure. No Party shall be held liable or responsible to the other Party nor be deemed to be in default under, or in breach of any provision of, this Agreement for failure or delay in fulfilling or performing any obligation (other than a payment obligation) of this Agreement when such failure or delay is due to force majeure, and without the fault or negligence of the Party so failing or delaying. For purposes of this Agreement, force majeure is defined as causes beyond the control of the Party, including acts of God; material changes in Law; war; civil commotion; destruction of production facilities or materials by fire, flood, earthquake, explosion or storm; labor disturbances; epidemic; and failure of public utilities or common carriers. In any such event, the affected Party shall immediately notify the other Party of such inability and of the period for which such inability is expected to continue. The Party giving such notice shall thereupon be excused from such of its obligations under this Agreement as it is thereby disabled from performing for so long as it is so disabled for up to a maximum of [**] days, after which time the Parties shall promptly meet to discuss in good faith how to best proceed in a manner that maintains and abides by the Agreement. To the extent possible, each Party shall use reasonable efforts to minimize the duration of any force majeure.

10.7. Notices. Any notice or request required or permitted to be given under or in connection with this Agreement shall be deemed to have been sufficiently given if in writing and personally delivered or sent by certified mail (return receipt requested), facsimile transmission (receipt verified), or overnight express courier service (signature required), prepaid, to the Party for which such notice is intended, at the address set forth for such Party below:

If to Bio Palette,

addressed to:	Bio Palette Co., Ltd. 1-1 Rokkodai-cho, Nada-ku Kobe, 657-0013 Japan Attn: Chief Executive Officer E-mail: [**]
with a copy to:	Midosuji Legal Profession Corporation 20F Kasumigaseki Building 3-2-5 Kasumigaseki, Chiyoda-ku Tokyo, 100-6020, Japan Telephone: [**] Facsimile: [**] E-mail: [**]

If to Beam,

addressed to:	Beam Therapeutics Inc. 26 Landsdowne Street Cambridge, MA 02139 Attn: Chief Executive Officer E-mail: [**]
with a copy to:	Ropes & Gray LLP Prudential Tower 800 Boylston Street Boston, MA 02199 Telephone: (617) 951-7826 Facsimile: (617) 235-0706 E-mail: [**]

or to such other address for such Party as it shall have specified by like notice to the other Party. If delivered personally or by facsimile transmission, the date of delivery shall be deemed to be the date on which such notice or request was given. If sent by certified or express mail, the date of delivery shall be deemed to be the fifth (5th) Business Day after the date of mailing. Notwithstanding the foregoing, notices of a change of address shall be effective only upon receipt thereof.

10.8. Export Clause. Each Party acknowledges that the Laws of the United States restrict the export and re-export of commodities and technical data of United States origin. Each Party agrees that it will not export or re-export restricted commodities or the technical data of the other Party in any form without the appropriate United States and foreign government licenses.

10.9. Waiver. Neither Party may waive or release any of its rights or interests in this Agreement except in writing. The failure of either Party to assert a right hereunder or to insist upon compliance with any term of this Agreement shall not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition. No waiver by either Party of any condition or term in any one or more instances shall be construed as a continuing waiver of such condition or term or of another condition or term.

10.10. Severability. If any provision hereof should be held invalid, illegal or unenforceable in any jurisdiction, the Parties shall negotiate in good faith a valid, legal and enforceable substitute provision that most nearly reflects the original intent of the Parties and all other provisions hereof shall remain in full force and effect in such jurisdiction and shall be liberally construed in order to carry out the intentions of the Parties hereto as nearly as may be possible. Such invalidity, illegality or unenforceability shall not affect the validity, legality or enforceability of such provision in any other jurisdiction.

10.11. Entire Agreement. This Agreement, together with the Exhibits and Schedules hereto, set forth all the covenants, promises, agreements, warranties, representations, conditions and understandings between the Parties hereto and supersede and terminate all prior agreements and understanding between the Parties. In particular, and without limitation, this Agreement supersedes and replaces the Existing Confidentiality Agreement and any and all term sheets relating to the transactions contemplated by this Agreement and exchanged between the Parties prior to the Effective Date. There are no covenants, promises, agreements, warranties, representations, conditions or understandings, either oral or written, between the Parties other than as set forth herein and therein. No subsequent alteration, amendment, change or addition to this Agreement shall be binding upon the Parties hereto unless reduced to writing and signed by the respective authorized officers of the Parties.

10.12. Independent Contractors. Nothing herein shall be construed to create any relationship of employer and employee, agent and principal, partnership or joint venture between the Parties. Each Party is an independent contractor. Neither Party shall assume, either directly or indirectly, any liability of or for the other Party. Neither Party shall have the authority to bind or obligate the other Party and neither Party shall represent that it has such authority.

10.13. Language; Construction. This Agreement is drafted in the English language and the English language version of this Agreement is deemed to be the legally binding and enforceable version of this Agreement, notwithstanding any translation of this Agreement into any other language. The terms of this Agreement represent the results of negotiations between the Parties and their representatives, each of which has been represented by counsel of its own choosing, and neither of which has acted under duress or compulsion, whether legal, economic or otherwise. Accordingly, the terms of this Agreement shall be interpreted and construed in accordance with their usual and customary meanings, and each of the Parties hereto hereby waives the application in connection with the interpretation and construction of this Agreement of any rule of Law to the effect that ambiguous or conflicting terms or provisions contained in this Agreement shall be interpreted or construed against the Party whose attorney prepared the executed draft or any earlier draft of this Agreement.

10.14. Books and Records. Any books and records to be maintained under this Agreement by a Party or its Affiliates, licensees or sublicensees shall be maintained in accordance with GAAP to the extent such books and records are subject to an audit right under this Agreement.

10.15. Further Actions. Each Party shall execute, acknowledge and deliver such further instruments, and do all such other acts, as may be necessary or appropriate in order to carry out the expressly stated purposes and the clear intent of this Agreement.

10.16. Parties in Interest. All of the terms and provisions of this Agreement shall be binding upon, and shall inure to the benefit of and be enforceable by the Parties hereto and their respective successors, heirs, administrators and permitted assigns.

10.17. Performance by Affiliates. To the extent that this Agreement imposes obligations on Affiliates of a Party, such Party agrees to cause its Affiliates to perform such obligations.

10.18. Counterparts. This Agreement may be signed in counterparts, each and every one of which shall be deemed an original, notwithstanding variations in format or file designation which may result from the electronic transmission, storage and printing of copies from separate computers or printers. Facsimile signatures and signatures transmitted via PDF shall be treated as original signatures.

[Signature page follows]

IN WITNESS WHEREOF, the Parties have executed this Agreement by their duly authorized representatives as of the Effective Date.

BIO PALETTE CO., LTD.		**BEAM THERAPEUTICS INC.**	
By:	/s/ Shoko Murase	By:	/s/ John Evans
Name:	Shoko Murase	Name:	John Evans
Title:	Chief Executive Officer	Title:	Chief Executive Officer

Exhibit A

Beam Patents

[**]

BEAM THERAPEUTICS INC.

2017 STOCK OPTION AND GRANT PLAN

SECTION 1. GENERAL PURPOSE OF THE PLAN; DEFINITIONS

The name of the plan is the Beam Therapeutics Inc. 2017 Stock Option and Grant Plan (the "Plan"). The purpose of the Plan is to encourage and enable the officers, employees, directors, Consultants and other key persons of Beam Therapeutics Inc., a Delaware corporation (including any successor entity, the "Company") and its Subsidiaries, upon whose judgment, initiative and efforts the Company largely depends for the successful conduct of its business, to acquire a proprietary interest in the Company.

The following terms shall be defined as set forth below:

"*Affiliate*" of any Person means a Person that directly or indirectly, through one or more intermediaries, controls, is controlled by or is under common control with the first mentioned Person. A Person shall be deemed to control another Person if such first Person possesses directly or indirectly the power to direct, or cause the direction of, the management and policies of the second Person, whether through the ownership of voting securities, by contract or otherwise.

"*Award*" or "*Awards*," except where referring to a particular category of grant under the Plan, shall include Incentive Stock Options, Non-Qualified Stock Options, Restricted Stock Awards, Unrestricted Stock Awards, Restricted Stock Units or any combination of the foregoing.

"Award Agreement" means a written or electronic agreement setting forth the terms and provisions applicable to an Award granted under the Plan. Each Award Agreement may contain terms and conditions in addition to those set forth in the Plan; *provided, however,* in the event of any conflict in the terms of the Plan and the Award Agreement, the terms of the Plan shall govern**.**

"*Board*" means the Board of Directors of the Company.

"*Cause*" shall have the meaning as set forth in the Award Agreement(s). In the case that any Award Agreement does not contain a definition of "Cause," it shall mean (i) the grantee's dishonest statements or acts with respect to the Company or any Affiliate of the Company, or any current or prospective customers, suppliers vendors or other third parties with which such entity does business; (ii) the grantee's commission of (A) a felony or (B) any misdemeanor involving moral turpitude, deceit, dishonesty or fraud; (iii) the grantee's failure to perform his assigned duties and responsibilities to the reasonable satisfaction of the Company which failure continues, in the reasonable judgment of the Company, after written notice given to the grantee by the Company; (iv) the grantee's gross negligence, willful misconduct or insubordination with respect to the Company or any Affiliate of the Company; or (v) the grantee's material violation of any provision of any agreement(s) between the grantee and the Company relating to noncompetition, nonsolicitation, nondisclosure and/or assignment of inventions.

"*Chief Executive Officer*" means the Chief Executive Officer of the Company or, if there is no Chief Executive Officer, then the President of the Company.

"*Code*" means the Internal Revenue Code of 1986, as amended, and any successor Code, and related rules, regulations and interpretations.

"*Committee*" means the Committee of the Board referred to in Section 2.

"*Consultant*" means any natural person that provides bona fide services to the Company (including a Subsidiary), and such services are not in connection with the offer or sale of securities in a capital-raising transaction and do not directly or indirectly promote or maintain a market for the Company's securities.

"*Disability*" means "disability" as defined in Section 422(c) of the Code.

"*Effective Date*" means the date on which the Plan is adopted as set forth on the final page of the Plan.

"*Exchange Act*" means the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder.

"*Fair Market Value*" of the Stock on any given date means the fair market value of the Stock determined in good faith by the Committee based on the reasonable application of a reasonable valuation method not inconsistent with Section 409A of the Code. If the Stock is admitted to trade on a national securities exchange, the determination shall be made by reference to the closing price reported on such exchange. If there is no closing price for such date, the determination shall be made by reference to the last date preceding such date for which there is a closing price. If the date for which Fair Market Value is determined is the first day when trading prices for the Stock are reported on a national securities exchange, the Fair Market Value shall be the "Price to the Public" (or equivalent) set forth on the cover page for the final prospectus relating to the Company's Initial Public Offering.

"*Good Reason*" shall have the meaning as set forth in the Award Agreement(s). In the case that any Award Agreement does not contain a definition of "Good Reason," it shall mean (i) a material diminution in the grantee's base salary except for across-the-board salary reductions similarly affecting all or substantially all similarly situated employees of the Company or (ii) a change of more than 50 miles in the geographic location at which the grantee provides services to the Company, so long as the grantee provides at least 90 days notice to the Company following the initial occurrence of any such event and the Company fails to cure such event within 30 days thereafter.

"*Grant Date*" means the date that the Committee designates in its approval of an Award in accordance with applicable law as the date on which the Award is granted, which date may not precede the date of such Committee approval.

"*Holder*" means, with respect to an Award or any Shares, the Person holding such Award or Shares, including the initial recipient of the Award or any Permitted Transferee.

"*Incentive Stock Option*" means any Stock Option designated and qualified as an "incentive stock option" as defined in Section 422 of the Code.

"*Initial Public Offering*" means the consummation of the first firm commitment underwritten public offering pursuant to an effective registration statement under the Securities Act covering the offer and sale by the Company of its equity securities, as a result of or following which the Stock shall be publicly held.

"*Non-Qualified Stock Option*" means any Stock Option that is not an Incentive Stock Option.

"*Option*" or "*Stock Option*" means any option to purchase shares of Stock granted pursuant to Section 5.

"*Permitted Transferees*" shall mean any of the following to whom a Holder may transfer Shares hereunder (as set forth in Section 9(a)(ii)(A)): the Holder's child, stepchild, grandchild, parent, stepparent, grandparent, spouse, former spouse, sibling, niece, nephew, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, including adoptive relationships, any person sharing the Holder's household (other than a tenant or employee), a trust in which these persons have more than fifty percent of the beneficial interest, a foundation in which these persons control the management of assets, and any other entity in which these persons own more than fifty percent of the voting interests*; provided, however,* that any such trust does not require or permit distribution of any Shares during the term of the Award Agreement unless subject to its terms. Upon the death of the Holder, the term Permitted Transferees shall also include such deceased Holder's estate, executors, administrators, personal representatives, heirs, legatees and distributees, as the case may be.

"*Person*" shall mean any individual, corporation, partnership (limited or general), limited liability company, limited liability partnership, association, trust, joint venture, unincorporated organization or any similar entity.

"Restricted Stock Award" means Awards granted pursuant to Section 6 and *"Restricted Stock"* means Shares issued pursuant to such Awards.

"Restricted Stock Unit" means an Award of phantom stock units to a grantee, which may be settled in cash or Shares as determined by the Committee, pursuant to Section 8.

"*Sale Event"* means the consummation of (i) the dissolution or liquidation of the Company, (ii) the sale of all or substantially all of the assets of the Company on a consolidated basis to an unrelated person or entity, (iii) a merger, reorganization or consolidation pursuant to which the holders of the Company's outstanding voting power immediately prior to such transaction do not own a majority of the outstanding voting power of the surviving or resulting entity (or its ultimate parent, if applicable), (iv) the acquisition of all or a majority of the outstanding voting stock of the Company in a single transaction or a series of related transactions by a Person or group of Persons, or (v) any other acquisition of the business of the Company, as determined by the Board; *provided, however,* that the Company's Initial Public Offering, any subsequent public offering or another capital raising event, or a merger effected solely to change the Company's domicile shall not constitute a "Sale Event."

"*Section 409A*" means Section 409A of the Code and the regulations and other guidance promulgated thereunder.

"*Securities Act*" means the Securities Act of 1933, as amended, and the rules and regulations thereunder.

"*Service Relationship*" means any relationship as a full-time employee, part-time employee, director or other key person (including Consultants) of the Company or any Subsidiary or any successor entity (e.g., a Service Relationship shall be deemed to continue without interruption in the event an individual's status changes from full-time employee to part-time employee or Consultant).

"*Shares*" means shares of Stock.

"*Stock*" means the Common Stock, par value $0.01 per share, of the Company.

"*Subsidiary*" means any corporation or other entity (other than the Company) in which the Company has more than a 50 percent interest, either directly or indirectly.

"*Ten Percent Owner*" means an employee who owns or is deemed to own (by reason of the attribution rules of Section 424(d) of the Code) more than 10 percent of the combined voting power of all classes of stock of the Company or any parent of the Company or any Subsidiary.

"*Termination Event*" means the termination of the Award recipient's Service Relationship with the Company and its Subsidiaries for any reason whatsoever, regardless of the circumstances thereof, and including, without limitation, upon death, disability, retirement, discharge or resignation for any reason, whether voluntarily or involuntarily. The following shall not constitute a Termination Event: (i) a transfer to the service of the Company from a Subsidiary or from the Company to a Subsidiary, or from one Subsidiary to another Subsidiary or (ii) an approved leave of absence for military service or sickness, or for any other purpose approved by the Committee, if the individual's right to re-employment is guaranteed either by a statute or by contract or under the policy pursuant to which the leave of absence was granted or if the Committee otherwise so provides in writing.

"*Unrestricted Stock Award*" means any Award granted pursuant to Section 7 and "*Unrestricted Stock*" means Shares issued pursuant to such Awards.

SECTION 2. ADMINISTRATION OF PLAN; COMMITTEE AUTHORITY TO SELECT GRANTEES AND DETERMINE AWARDS

(a) Administration of Plan. The Plan shall be administered by the Board, or at the discretion of the Board, by a committee of the Board, comprised of not less than two directors. All references herein to the "Committee" shall be deemed to refer to the group then responsible for administration of the Plan at the relevant time (i.e., either the Board of Directors or a committee or committees of the Board, as applicable).

(b) Powers of Committee. The Committee shall have the power and authority to grant Awards consistent with the terms of the Plan, including the power and authority:

(i) to select the individuals to whom Awards may from time to time be granted;

(ii) to determine the time or times of grant, and the amount, if any, of Incentive Stock Options, Non-Qualified Stock Options, Restricted Stock Awards, Unrestricted Stock Awards, Restricted Stock Units, or any combination of the foregoing, granted to any one or more grantees;

(iii) to determine the number of Shares to be covered by any Award and, subject to the provisions of the Plan, the price, exercise price, conversion ratio or other price relating thereto;

(iv) to determine and, subject to Section 12, to modify from time to time the terms and conditions, including restrictions, not inconsistent with the terms of the Plan, of any Award, which terms and conditions may differ among individual Awards and grantees, and to approve the form of Award Agreements;

(v) to accelerate at any time the exercisability or vesting of all or any portion of any Award;

(vi) to impose any limitations on Awards, including limitations on transfers, repurchase provisions and the like, and to exercise repurchase rights or obligations;

(vii) subject to Section 5(a)(ii) and any restrictions imposed by Section 409A, to extend at any time the period in which Stock Options may be exercised; and

(viii) at any time to adopt, alter and repeal such rules, guidelines and practices for administration of the Plan and for its own acts and proceedings as it shall deem advisable; to interpret the terms and provisions of the Plan and any Award (including Award Agreements); to make all determinations it deems advisable for the administration of the Plan; to decide all disputes arising in connection with the Plan; and to otherwise supervise the administration of the Plan.

All decisions and interpretations of the Committee shall be binding on all persons, including the Company and all Holders.

(c) Award Agreement. Awards under the Plan shall be evidenced by Award Agreements that set forth the terms, conditions and limitations for each Award.

(d) Indemnification. Neither the Board nor the Committee, nor any member of either or any delegate thereof, shall be liable for any act, omission, interpretation, construction or determination made in good faith in connection with the Plan, and the members of the Board and the Committee (and any delegate thereof) shall be entitled in all cases to indemnification and reimbursement by the Company in respect of any claim, loss, damage or expense (including, without limitation, reasonable attorneys' fees) arising or resulting therefrom to the fullest extent permitted by law and/or under the Company's governing documents, including its certificate of incorporation or By-Laws, or any directors' and officers' liability insurance coverage which may be in effect from time to time and/or any indemnification agreement between such individual and the Company.

(e) Foreign Award Recipients. Notwithstanding any provision of the Plan to the contrary, in order to comply with the laws in other countries in which the Company and any Subsidiary operate or have employees or other individuals eligible for Awards, the Committee, in its sole discretion, shall have the power and authority to: (i) determine which Subsidiaries, if any, shall be covered by the Plan; (ii) determine which individuals, if any, outside the United States are eligible to participate in the Plan; (iii) modify the terms and conditions of any Award granted to individuals outside the United States to comply with applicable foreign laws; (iv) establish subplans and modify exercise procedures and other terms and procedures, to the extent the Committee determines such actions to be necessary or advisable (and such subplans and/or modifications shall be attached to the Plan as appendices); provided, however, that no such subplans and/or modifications shall increase the share limitation contained in Section 3(a) hereof; and (v) take any action, before or after an Award is made, that the Committee determines to be necessary or advisable to obtain approval or comply with any local governmental regulatory exemptions or approvals.

SECTION 3. STOCK ISSUABLE UNDER THE PLAN; MERGERS AND OTHER TRANSACTIONS; SUBSTITUTION

(a) Stock Issuable. The maximum number of Shares reserved and available for issuance under the Plan shall be 1,363,636 Shares, subject to adjustment as provided in Section 3(b). For purposes of this limitation, the Shares underlying any Awards that are forfeited, canceled, reacquired by the Company prior to vesting, satisfied without the issuance of Stock or otherwise terminated (other than by exercise) and Shares that are withheld upon exercise of an Option or settlement of an Award to cover the exercise price or tax withholding shall be added back to the Shares available for issuance under the Plan. Subject to such overall limitations, Shares may be issued up to such maximum number pursuant to any type or types of Award, and no more than 10,227,273 Shares may be issued pursuant to Incentive Stock Options. The Shares available for issuance under the Plan may be authorized but unissued Shares or Shares reacquired by the Company. Beginning on the date that the Company becomes subject to Section 162(m) of the Code, Options with respect to no more than 10,227,273 Shares shall be granted to any one individual in any calendar year period.

(b) Changes in Stock. Subject to Section 3(c) hereof, if, as a result of any reorganization, recapitalization, reclassification, stock dividend, stock split, reverse stock split or other similar change in the Company's capital stock, the outstanding Shares are increased or decreased or are exchanged for a different number or kind of shares or other securities of the Company, or additional Shares or new or different shares or other securities of the Company or other non-cash assets are distributed with respect to such Shares or other securities, in each case, without the receipt of consideration by the Company, or, if, as a result of any merger or consolidation, or sale of all or substantially all of the assets of the Company, the outstanding Shares are converted into or exchanged for other securities of the Company or any successor entity (or a parent or subsidiary thereof), the Committee shall make an appropriate and proportionate adjustment in (i) the maximum number of Shares reserved for issuance under the Plan, (ii) the number and kind of Shares or other securities subject to any then outstanding

Awards under the Plan, (iii) the repurchase price, if any, per Share subject to each outstanding Award, and (iv) the exercise price for each Share subject to any then outstanding Stock Options under the Plan, without changing the aggregate exercise price (i.e., the exercise price multiplied by the number of Stock Options) as to which such Stock Options remain exercisable. The adjustment by the Committee shall be final, binding and conclusive. No fractional Shares shall be issued under the Plan resulting from any such adjustment, but the Committee in its discretion may make a cash payment in lieu of fractional shares.

(c) Sale Events.

(i) Options.

(A) In the case of and subject to the consummation of a Sale Event, the Plan and all outstanding Options issued hereunder shall terminate upon the effective time of any such Sale Event unless assumed or continued by the successor entity, or new stock options or other awards of the successor entity or parent thereof are substituted therefor, with an equitable or proportionate adjustment as to the number and kind of shares and, if appropriate, the per share exercise prices, as such parties shall agree (after taking into account any acceleration hereunder and/or pursuant to the terms of any Award Agreement).

(B) In the event of the termination of the Plan and all outstanding Options issued hereunder pursuant to Section 3(c), each Holder of Options shall be permitted, within a period of time prior to the consummation of the Sale Event as specified by the Committee, to exercise all such Options which are then exercisable or will become exercisable as of the effective time of the Sale Event; *provided*, *however*, that the exercise of Options not exercisable prior to the Sale Event shall be subject to the consummation of the Sale Event.

(C) Notwithstanding anything to the contrary in Section 3(c)(i)(A), in the event of a Sale Event, the Company shall have the right, but not the obligation, to make or provide for a cash payment to the Holders of Options, without any consent of the Holders, in exchange for the cancellation thereof, in an amount equal to the difference between (A) the value as determined by the Committee of the consideration payable per share of Stock pursuant to the Sale Event (the "Sale Price") times the number of Shares subject to outstanding Options being cancelled (to the extent then vested and exercisable, including by reason of acceleration in connection with such Sale Event, at prices not in excess of the Sale Price) and (B) the aggregate exercise price of all such outstanding vested and exercisable Options.

(ii) Restricted Stock and Restricted Stock Unit Awards.

(A) In the case of and subject to the consummation of a Sale Event, all unvested Restricted Stock and unvested Restricted Stock Unit Awards (other than those becoming vested as a result of the Sale Event) issued hereunder shall be forfeited immediately prior to the effective time of any such Sale Event unless assumed or continued by the successor entity, or awards of the successor entity or parent thereof are

substituted therefor, with an equitable or proportionate adjustment as to the number and kind of shares subject to such awards as such parties shall agree (after taking into account any acceleration hereunder and/or pursuant to the terms of any Award Agreement).

(B) In the event of the forfeiture of Restricted Stock pursuant to Section 3(c)(ii)(A), such Restricted Stock shall be repurchased from the Holder thereof at a price per share equal to the original per share purchase price paid by the Holder (subject to adjustment as provided in Section 3(b)) for such Shares.

(C) Notwithstanding anything to the contrary in Section 3(c)(ii)(A), in the event of a Sale Event, the Company shall have the right, but not the obligation, to make or provide for a cash payment to the Holders of Restricted Stock or Restricted Stock Unit Awards, without consent of the Holders, in exchange for the cancellation thereof, in an amount equal to the Sale Price times the number of Shares subject to such Awards, to be paid at the time of such Sale Event or upon the later vesting of such Awards.

SECTION 4. ELIGIBILITY

Grantees under the Plan will be such full or part-time officers and other employees, directors, Consultants and key persons of the Company and any Subsidiary who are selected from time to time by the Committee in its sole discretion; provided, however, that Awards shall be granted only to those individuals described in Rule 701(c) of the Securities Act.

SECTION 5. STOCK OPTIONS

Upon the grant of a Stock Option, the Company and the grantee shall enter into an Award Agreement. The terms and conditions of each such Award Agreement shall be determined by the Committee, and such terms and conditions may differ among individual Awards and grantees.

Stock Options granted under the Plan may be either Incentive Stock Options or Non-Qualified Stock Options. Incentive Stock Options may be granted only to employees of the Company or any Subsidiary that is a "subsidiary corporation" within the meaning of Section 424(f) of the Code. To the extent that any Option does not qualify as an Incentive Stock Option, it shall be deemed a Non-Qualified Stock Option.

(a) Terms of Stock Options. The Committee in its discretion may grant Stock Options to those individuals who meet the eligibility requirements of Section 4. Stock Options shall be subject to the following terms and conditions and shall contain such additional terms and conditions, not inconsistent with the terms of the Plan, as the Committee shall deem desirable.

(i) Exercise Price. The exercise price per share for the Shares covered by a Stock Option shall be determined by the Committee at the time of grant but shall not be less than 100 percent of the Fair Market Value on the Grant Date. In the case of an Incentive Stock Option that is granted to a Ten Percent Owner, the exercise price per share for the Shares covered by such Incentive Stock Option shall not be less than 110 percent of the Fair Market Value on the Grant Date.

(ii) Option Term. The term of each Stock Option shall be fixed by the Committee, but no Stock Option shall be exercisable more than ten years from the Grant Date. In the case of an Incentive Stock Option that is granted to a Ten Percent Owner, the term of such Stock Option shall be no more than five years from the Grant Date.

(iii) Exercisability; Rights of a Stockholder. Stock Options shall become exercisable and/or vested at such time or times, whether or not in installments, as shall be determined by the Committee at or after the Grant Date. The Award Agreement may permit a grantee to exercise all or a portion of a Stock Option immediately at grant; provided that the Shares issued upon such exercise shall be subject to restrictions and a vesting schedule identical to the vesting schedule of the related Stock Option, such Shares shall be deemed to be Restricted Stock for purposes of the Plan, and the optionee may be required to enter into an additional or new Award Agreement as a condition to exercise of such Stock Option. An optionee shall have the rights of a stockholder only as to Shares acquired upon the exercise of a Stock Option and not as to unexercised Stock Options. An optionee shall not be deemed to have acquired any Shares unless and until a Stock Option shall have been exercised pursuant to the terms of the Award Agreement and this Plan and the optionee's name has been entered on the books of the Company as a stockholder.

(iv) Method of Exercise. Stock Options may be exercised by an optionee in whole or in part, by the optionee giving written or electronic notice of exercise to the Company, specifying the number of Shares to be purchased. Payment of the purchase price may be made by one or more of the following methods (or any combination thereof) to the extent provided in the Award Agreement:

(A) In cash, by certified or bank check, by wire transfer of immediately available funds, or other instrument acceptable to the Committee;

(B) If permitted by the Committee, by the optionee delivering to the Company a promissory note, if the Board has expressly authorized the loan of funds to the optionee for the purpose of enabling or assisting the optionee to effect the exercise of his or her Stock Option; provided, that at least so much of the exercise price as represents the par value of the Stock shall be paid in cash if required by state law;

(C) If permitted by the Committee and the Initial Public Offering has occurred (or the Stock otherwise becomes publicly-traded), through the delivery (or attestation to the ownership) of Shares that have been purchased by the optionee on the open market or that are beneficially owned by the optionee and are not then subject to restrictions under any Company plan. To the extent required to avoid variable accounting treatment under ASC 718 or other applicable accounting rules, such surrendered Shares if originally purchased from the Company shall have been owned by the optionee for at least six months. Such surrendered Shares shall be valued at Fair Market Value on the exercise date;

(D) If permitted by the Committee and the Initial Public Offering has occurred (or the Stock otherwise becomes publicly-traded), by the optionee delivering to the Company a properly executed exercise notice together with irrevocable instructions to

a broker to promptly deliver to the Company cash or a check payable and acceptable to the Company for the purchase price; provided that in the event the optionee chooses to pay the purchase price as so provided, the optionee and the broker shall comply with such procedures and enter into such agreements of indemnity and other agreements as the Committee shall prescribe as a condition of such payment procedure; or

(E) If permitted by the Committee, and only with respect to Stock Options that are not Incentive Stock Options, by a "net exercise" arrangement pursuant to which the Company will reduce the number of Shares issuable upon exercise by the largest whole number of Shares with a Fair Market Value that does not exceed the aggregate exercise price.

Payment instruments will be received subject to collection. No certificates for Shares so purchased will be issued to the optionee or, with respect to uncertificated Stock, no transfer to the optionee on the records of the Company will take place, until the Company has completed all steps it has deemed necessary to satisfy legal requirements relating to the issuance and sale of the Shares, which steps may include, without limitation, (i) receipt of a representation from the optionee at the time of exercise of the Option that the optionee is purchasing the Shares for the optionee's own account and not with a view to any sale or distribution of the Shares or other representations relating to compliance with applicable law governing the issuance of securities, (ii) the legending of the certificate (or notation on any book entry) representing the Shares to evidence the foregoing restrictions, and (iii) obtaining from optionee payment or provision for all withholding taxes due as a result of the exercise of the Option. The delivery of certificates representing the shares of Stock (or the transfer to the optionee on the records of the Company with respect to uncertificated Stock) to be purchased pursuant to the exercise of a Stock Option will be contingent upon (A) receipt from the optionee (or a purchaser acting in his or her stead in accordance with the provisions of the Stock Option) by the Company of the full purchase price for such Shares and the fulfillment of any other requirements contained in the Award Agreement or applicable provisions of laws and (B) if required by the Company, the optionee shall have entered into any stockholders agreements or other agreements with the Company and/or certain other of the Company's stockholders relating to the Stock. In the event an optionee chooses to pay the purchase price by previously-owned Shares through the attestation method, the number of Shares transferred to the optionee upon the exercise of the Stock Option shall be net of the number of Shares attested to.

(b) Annual Limit on Incentive Stock Options. To the extent required for "incentive stock option" treatment under Section 422 of the Code, the aggregate Fair Market Value (determined as of the Grant Date) of the Shares with respect to which Incentive Stock Options granted under the Plan and any other plan of the Company or its parent and any Subsidiary that become exercisable for the first time by an optionee during any calendar year shall not exceed $100,000 or such other limit as may be in effect from time to time under Section 422 of the Code. To the extent that any Stock Option exceeds this limit, it shall constitute a Non-Qualified Stock Option.

(c) Termination. Any portion of a Stock Option that is not vested and exercisable on the date of termination of an optionee's Service Relationship shall immediately expire and be null and void. Once any portion of the Stock Option becomes vested and exercisable, the

optionee's right to exercise such portion of the Stock Option (or the optionee's representatives and legatees as applicable) in the event of a termination of the optionee's Service Relationship shall continue until the earliest of: (i) the date which is: (A) 12 months following the date on which the optionee's Service Relationship terminates due to death or Disability (or such longer period of time as determined by the Committee and set forth in the applicable Award Agreement), or (B) three months following the date on which the optionee's Service Relationship terminates if the termination is due to any reason other than death or Disability (or such longer period of time as determined by the Committee and set forth in the applicable Award Agreement), or (ii) the Expiration Date set forth in the Award Agreement; provided that notwithstanding the foregoing, an Award Agreement may provide that if the optionee's Service Relationship is terminated for Cause, the Stock Option shall terminate immediately and be null and void upon the date of the optionee's termination and shall not thereafter be exercisable.

SECTION 6. RESTRICTED STOCK AWARDS

(a) Nature of Restricted Stock Awards. The Committee may, in its sole discretion, grant (or sell at par value or such other purchase price determined by the Committee) to an eligible individual under Section 4 hereof a Restricted Stock Award under the Plan. The Committee shall determine the restrictions and conditions applicable to each Restricted Stock Award at the time of grant. Conditions may be based on continuing employment (or other Service Relationship), achievement of pre-established performance goals and objectives and/or such other criteria as the Committee may determine. Upon the grant of a Restricted Stock Award, the Company and the grantee shall enter into an Award Agreement. The terms and conditions of each such Award Agreement shall be determined by the Committee, and such terms and conditions may differ among individual Awards and grantees.

(b) Rights as a Stockholder. Upon the grant of the Restricted Stock Award and payment of any applicable purchase price, a grantee of Restricted Stock shall be considered the record owner of and shall be entitled to vote the Restricted Stock if, and to the extent, such Shares are entitled to voting rights, subject to such conditions contained in the Award Agreement. The grantee shall be entitled to receive all dividends and any other distributions declared on the Shares; provided, however, that the Company is under no duty to declare any such dividends or to make any such distribution. Unless the Committee shall otherwise determine, certificates evidencing the Restricted Stock shall remain in the possession of the Company until such Restricted Stock is vested as provided in subsection (d) below of this Section, and the grantee shall be required, as a condition of the grant, to deliver to the Company a stock power endorsed in blank and such other instruments of transfer as the Committee may prescribe.

(c) Restrictions. Restricted Stock may not be sold, assigned, transferred, pledged or otherwise encumbered or disposed of except as specifically provided herein or in the Award Agreement. Except as may otherwise be provided by the Committee either in the Award Agreement or, subject to Section 12 below, in writing after the Award Agreement is issued, if a grantee's Service Relationship with the Company and any Subsidiary terminates, the Company or its assigns shall have the right, as may be specified in the relevant instrument, to repurchase some or all of the Shares subject to the Award at such purchase price as is set forth in the Award Agreement.

(d) Vesting of Restricted Stock. The Committee at the time of grant shall specify in the Award Agreement the date or dates and/or the attainment of pre-established performance goals, objectives and other conditions on which the substantial risk of forfeiture imposed shall lapse and the Restricted Stock shall become vested, subject to such further rights of the Company or its assigns as may be specified in the Award Agreement.

SECTION 7. UNRESTRICTED STOCK AWARDS

The Committee may, in its sole discretion, grant (or sell at par value or such other purchase price determined by the Committee) to an eligible person under Section 4 hereof an Unrestricted Stock Award under the Plan. Unrestricted Stock Awards may be granted in respect of past services or other valid consideration, or in lieu of cash compensation due to such grantee.

SECTION 8. RESTRICTED STOCK UNITS

(a) Nature of Restricted Stock Units. The Committee may, in its sole discretion, grant to an eligible person under Section 4 hereof Restricted Stock Units under the Plan. The Committee shall determine the restrictions and conditions applicable to each Restricted Stock Unit at the time of grant. Vesting conditions may be based on continuing employment (or other Service Relationship), achievement of pre-established performance goals and objectives and/or other such criteria as the Committee may determine. Upon the grant of Restricted Stock Units, the grantee and the Company shall enter into an Award Agreement. The terms and conditions of each such Award Agreement shall be determined by the Committee and may differ among individual Awards and grantees. On or promptly following the vesting date or dates applicable to any Restricted Stock Unit, but in no event later than March 15 of the year following the year in which such vesting occurs, such Restricted Stock Unit(s) shall be settled in the form of cash or shares of Stock, as specified in the Award Agreement. Restricted Stock Units may not be sold, assigned, transferred, pledged, or otherwise encumbered or disposed of.

(b) Rights as a Stockholder. A grantee shall have the rights of a stockholder only as to Shares, if any, acquired upon settlement of Restricted Stock Units. A grantee shall not be deemed to have acquired any such Shares unless and until the Restricted Stock Units shall have been settled in Shares pursuant to the terms of the Plan and the Award Agreement, the Company shall have issued and delivered a certificate representing the Shares to the grantee (or transferred on the records of the Company with respect to uncertificated stock), and the grantee's name has been entered in the books of the Company as a stockholder.

(c) Termination. Except as may otherwise be provided by the Committee either in the Award Agreement or in writing after the Award Agreement is issued, a grantee's right in all Restricted Stock Units that have not vested shall automatically terminate upon the grantee's cessation of Service Relationship with the Company and any Subsidiary for any reason.

SECTION 9. TRANSFER RESTRICTIONS; COMPANY RIGHT OF FIRST REFUSAL; COMPANY REPURCHASE RIGHTS

(a) Restrictions on Transfer.

(i) Non-Transferability of Stock Options. Stock Options and, prior to exercise, the Shares issuable upon exercise of such Stock Option, shall not be transferable by the optionee otherwise than by will, or by the laws of descent and distribution, and all Stock Options shall be exercisable, during the optionee's lifetime, only by the optionee, or by the optionee's legal representative or guardian in the event of the optionee's incapacity. Notwithstanding the foregoing, the Committee, in its sole discretion, may provide in the Award Agreement regarding a given Stock Option that the optionee may transfer by gift, without consideration for the transfer, his or her Non-Qualified Stock Options to his or her family members (as defined in Rule 701 of the Securities Act), to trusts for the benefit of such family members, or to partnerships in which such family members are the only partners (to the extent such trusts or partnerships are considered "family members" for purposes of Rule 701 of the Securities Act), provided that the transferee agrees in writing with the Company to be bound by all of the terms and conditions of this Plan and the applicable Award Agreement, including the execution of a stock power upon the issuance of Shares. Stock Options, and the Shares issuable upon exercise of such Stock Options, shall be restricted as to any pledge, hypothecation, or other transfer, including any short position, any "put equivalent position" (as defined in the Exchange Act) or any "call equivalent position" (as defined in the Exchange Act) prior to exercise.

(ii) Shares. No Shares shall be sold, assigned, transferred, pledged, hypothecated, given away or in any other manner disposed of or encumbered, whether voluntarily or by operation of law, unless (i) the transfer is in compliance with the terms of the applicable Award Agreement, all applicable securities laws (including, without limitation, the Securities Act), and with the terms and conditions of this Section 9, (ii) the transfer does not cause the Company to become subject to the reporting requirements of the Exchange Act, and (iii) the transferee consents in writing to be bound by the provisions of the Plan and the Award Agreement, including this Section 9. In connection with any proposed transfer, the Committee may require the transferor to provide at the transferor's own expense an opinion of counsel to the transferor, satisfactory to the Committee, that such transfer is in compliance with all foreign, federal and state securities laws (including, without limitation, the Securities Act). Any attempted transfer of Shares not in accordance with the terms and conditions of this Section 9 shall be null and void, and the Company shall not reflect on its records any change in record ownership of any Shares as a result of any such transfer, shall otherwise refuse to recognize any such transfer and shall not in any way give effect to any such transfer of Shares. The Company shall be entitled to seek protective orders, injunctive relief and other remedies available at law or in equity including, without limitation, seeking specific performance or the rescission of any transfer not made in strict compliance with the provisions of this Section 9. Subject to the foregoing general provisions, and unless otherwise provided in the applicable Award Agreement, Shares may be transferred pursuant to the following specific terms and conditions (provided that

with respect to any transfer of Restricted Stock, all vesting and forfeiture provisions shall continue to apply with respect to the original recipient):

(A) Transfers to Permitted Transferees. The Holder may transfer any or all of the Shares to one or more Permitted Transferees; *provided, however*, that following such transfer, such Shares shall continue to be subject to the terms of this Plan (including this Section 9) and such Permitted Transferee(s) shall, as a condition to any such transfer, deliver a written acknowledgment to that effect to the Company and shall deliver a stock power to the Company with respect to the Shares. Notwithstanding the foregoing, the Holder may not transfer any of the Shares to a Person whom the Company reasonably determines is a direct competitor or a potential competitor of the Company or any of its Subsidiaries.

(B) Transfers Upon Death. Upon the death of the Holder, any Shares then held by the Holder at the time of such death and any Shares acquired after the Holder's death by the Holder's legal representative shall be subject to the provisions of this Plan, and the Holder's estate, executors, administrators, personal representatives, heirs, legatees and distributees shall be obligated to convey such Shares to the Company or its assigns under the terms contemplated by the Plan and the Award Agreement.

(b) Right of First Refusal. In the event that a Holder desires at any time to sell or otherwise transfer all or any part of his or her Shares (other than shares of Restricted Stock which by their terms are not transferrable), the Holder first shall give written notice to the Company of the Holder's intention to make such transfer. Such notice shall state the number of Shares that the Holder proposes to sell (the "Offered Shares"), the price and the terms at which the proposed sale is to be made and the name and address of the proposed transferee. At any time within 30 days after the receipt of such notice by the Company, the Company or its assigns may elect to purchase all or any portion of the Offered Shares at the price and on the terms offered by the proposed transferee and specified in the notice. The Company or its assigns shall exercise this right by mailing or delivering written notice to the Holder within the foregoing 30-day period. If the Company or its assigns elect to exercise its purchase rights under this Section 9(b), the closing for such purchase shall, in any event, take place within 45 days after the receipt by the Company of the initial notice from the Holder. In the event that the Company or its assigns do not elect to exercise such purchase right, or in the event that the Company or its assigns do not pay the full purchase price within such 45-day period, the Holder shall be required to pay a transaction processing fee of $10,000 to the Company (unless waived by the Committee) and then may, within 60 days thereafter, sell the Offered Shares to the proposed transferee and at the same price and on the same terms as specified in the Holder's notice. Any Shares not sold to the proposed transferee shall remain subject to the Plan. If the Holder is a party to any stockholders agreements or other agreements with the Company and/or certain other of the Company's stockholders relating to the Shares, (i) the transferring Holder shall comply with the requirements of such stockholders agreements or other agreements relating to any proposed transfer of the Offered Shares, and (ii) any proposed transferee that purchases Offered Shares shall enter into such stockholders agreements or other agreements with the Company and/or certain of the Company's stockholders relating to the Offered Shares on the same terms and in the same capacity as the transferring Holder.

(c) Company's Right of Repurchase.

(i) Right of Repurchase for Unvested Shares Issued Upon the Exercise of an Option. Upon a Termination Event, the Company or its assigns shall have the right and option to repurchase from a Holder of Shares acquired upon exercise of a Stock Option which are still subject to a risk of forfeiture as of the Termination Event. Such repurchase rights may be exercised by the Company within the later of (A) six months following the date of such Termination Event or (B) seven months after the acquisition of Shares upon exercise of a Stock Option. The repurchase price shall be equal to the lower of the original per share price paid by the Holder, subject to adjustment as provided in Section 3(b) of the Plan, or the current Fair Market Value of such Shares as of the date the Company elects to exercise its repurchase rights.

(ii) Right of Repurchase With Respect to Restricted Stock. Upon a Termination Event, the Company or its assigns shall have the right and option to repurchase from a Holder of Shares received pursuant to a Restricted Stock Award any Shares that are still subject to a risk of forfeiture as of the Termination Event. Such repurchase right may be exercised by the Company within six months following the date of such Termination Event. The repurchase price shall be the lower of the original per share purchase price paid by the Holder, subject to adjustment as provided in Section 3(b) of the Plan, or the current Fair Market Value of such Shares as of the date the Company elects to exercise its repurchase rights.

(iii) Procedure. Any repurchase right of the Company shall be exercised by the Company or its assigns by giving the Holder written notice on or before the last day of the repurchase period of its intention to exercise such repurchase right. Upon such notification, the Holder shall promptly surrender to the Company, free and clear of any liens or encumbrances, any certificates representing the Shares being purchased, together with a duly executed stock power for the transfer of such Shares to the Company or the Company's assignee or assignees. Upon the Company's or its assignee's receipt of the certificates from the Holder, the Company or its assignee or assignees shall deliver to him, her or them a check for the applicable repurchase price; *provided*, *however*, that the Company may pay the repurchase price by offsetting and canceling any indebtedness then owed by the Holder to the Company.

(d) Drag Along Right. In the event the holders of a majority of the Company's equity securities then outstanding (the "Majority Shareholders") determine to enter into a Sale Event in a bona fide negotiated transaction (a "Sale"), with any non-Affiliate of the Company or any majority shareholder (in each case, the "Buyer"), a Holder of Shares, including any Permitted Transferee, shall be obligated to and shall upon the written request of the Majority Shareholders: (a) sell, transfer and deliver, or cause to be sold, transferred and delivered, to the Buyer, his or her Shares (including for this purpose all of such Holder's Shares that presently or as a result of any such transaction may be acquired upon the exercise of an Option (following the payment of the exercise price therefor)) on substantially the same terms applicable to the Majority Shareholders (with appropriate adjustments to reflect the conversion of convertible securities, the redemption of redeemable securities and the exercise of exercisable securities as well as the relative preferences and priorities of preferred stock); and (b) execute and deliver such instruments of conveyance and transfer and take such other action, including voting such Shares in favor of any Sale proposed by the Majority Shareholders and executing any purchase agreements, merger agreements, indemnity agreements, escrow agreements or related documents as the Majority Shareholders or the Buyer may reasonably require in order to carry out the terms and provisions of this Section 9(d).

(e) Escrow Arrangement.

(i) Escrow. In order to carry out the provisions of this Section 9 of this Plan more effectively, the Company shall hold any Shares issued pursuant to Awards granted under the Plan in escrow together with separate stock powers executed by the Holder in blank for transfer. The Company shall not dispose of the Shares except as otherwise provided in this Plan. In the event of any repurchase by the Company (or any of its assigns), the Company is hereby authorized by the Holder, as the Holder's attorney-in-fact, to date and complete the stock powers necessary for the transfer of the Shares being purchased and to transfer such Shares in accordance with the terms hereof. At such time as any Shares are no longer subject to the Company's repurchase and first refusal rights, the Company shall, at the written request of the Holder, deliver to the Holder a certificate representing such Shares with the balance of the Shares to be held in escrow pursuant to this Section.

(ii) Remedy. Without limitation of any other provision of this Plan or other rights, in the event that a Holder or any other Person is required to sell a Holder's Shares pursuant to the provisions of Sections 9(b) or (c) hereof and in the further event that he or she refuses or for any reason fails to deliver to the Company or its designated purchaser of such Shares the certificate or certificates evidencing such Shares together with a related stock power, the Company or such designated purchaser may deposit the applicable purchase price for such Shares with a bank designated by the Company, or with the Company's independent public accounting firm, as agent or trustee, or in escrow, for such Holder or other Person, to be held by such bank or accounting firm for the benefit of and for delivery to him, her, them or it, and/or, in its discretion, pay such purchase price by offsetting any indebtedness then owed by such Holder as provided above. Upon any such deposit and/or offset by the Company or its designated purchaser of such amount and upon notice to the Person who was required to sell the Shares to be sold pursuant to the provisions of Sections 9(b) or (c), such Shares shall at such time be deemed to have been sold, assigned, transferred and conveyed to such purchaser, such Holder shall have no further rights thereto (other than the right to withdraw the payment thereof held in escrow, if applicable), and the Company shall record such transfer in its stock transfer book or in any appropriate manner.

(f) Lockup Provision. If requested by the Company, a Holder shall not sell or otherwise transfer or dispose of any Shares (including, without limitation, pursuant to Rule 144 under the Securities Act) held by him or her for such period following the effective date of a public offering by the Company of Shares as the Company shall specify reasonably and in good faith. If requested by the underwriter engaged by the Company, each Holder shall execute a separate letter confirming his or her agreement to comply with this Section.

(g) Adjustments for Changes in Capital Structure. If, as a result of any reorganization, recapitalization, reclassification, stock dividend, stock split, reverse stock split or other similar change in the Common Stock, the outstanding Shares are increased or decreased or are exchanged for a different number or kind of securities of the Company, the restrictions contained in this Section 9 shall apply with equal force to additional and/or substitute securities, if any, received by Holder in exchange for, or by virtue of his or her ownership of, Shares.

(h) Termination. The terms and provisions of Section 9(b) and Section 9(c) (except for the Company's right to repurchase Shares still subject to a risk of forfeiture upon a Termination Event) shall terminate upon the closing of the Company's Initial Public Offering or upon consummation of any Sale Event, in either case as a result of which Shares are registered under Section 12 of the Exchange Act and publicly-traded on any national security exchange.

SECTION 10. TAX WITHHOLDING

(a) Payment by Grantee. Each grantee shall, no later than the date as of which the value of an Award or of any Shares or other amounts received thereunder first becomes includable in the gross income of the grantee for income tax purposes, pay to the Company, or make arrangements satisfactory to the Committee regarding payment of, any Federal, state, or local taxes of any kind required by law to be withheld by the Company with respect to such income. The Company and any Subsidiary shall, to the extent permitted by law, have the right to deduct any such taxes from any payment of any kind otherwise due to the grantee. The Company's obligation to deliver stock certificates (or evidence of book entry) to any grantee is subject to and conditioned on any such tax withholding obligations being satisfied by the grantee.

(b) Payment in Stock. The Company's minimum required tax withholding obligation may be satisfied, in whole or in part, by the Company withholding from Shares to be issued pursuant to an Award a number of Shares having an aggregate Fair Market Value (as of the date the withholding is effected) that would satisfy the minimum withholding amount due.

SECTION 11. SECTION 409A AWARDS.

To the extent that any Award is determined to constitute "nonqualified deferred compensation" within the meaning of Section 409A (a "409A Award"), the Award shall be subject to such additional rules and requirements as may be specified by the Committee from time to time. In this regard, if any amount under a 409A Award is payable upon a "separation from service" (within the meaning of Section 409A) to a grantee who is considered a "specified employee" (within the meaning of Section 409A), then no such payment shall be made prior to the date that is the earlier of (i) six months and one day after the grantee's separation from service, or (ii) the grantee's death, but only to the extent such delay is necessary to prevent such payment from being subject to interest, penalties and/or additional tax imposed pursuant to Section 409A. The Company makes no representation or warranty and shall have no liability to any grantee under the Plan or any other Person with respect to any penalties or taxes under Section 409A that are, or may be, imposed with respect to any Award.

SECTION 12. AMENDMENTS AND TERMINATION

The Board may, at any time, amend or discontinue the Plan and the Committee may, at any time, amend or cancel any outstanding Award for the purpose of satisfying changes in law or for any other lawful purpose, but no such action shall adversely affect rights under any outstanding Award without the consent of the holder of the Award. The Committee may

exercise its discretion to reduce the exercise price of outstanding Stock Options or effect repricing through cancellation of outstanding Stock Options and by granting such holders new Awards in replacement of the cancelled Stock Options. To the extent determined by the Committee to be required either by the Code to ensure that Incentive Stock Options granted under the Plan are qualified under Section 422 of the Code or otherwise, Plan amendments shall be subject to approval by the Company stockholders entitled to vote at a meeting of stockholders. Nothing in this Section 12 shall limit the Board's or Committee's authority to take any action permitted pursuant to Section 3(c). The Board reserves the right to amend the Plan and/or the terms of any outstanding Stock Options to the extent reasonably necessary to comply with the requirements of the exemption pursuant to paragraph (f)(4) of Rule 12h-1 of the Exchange Act.

SECTION 13. STATUS OF PLAN

With respect to the portion of any Award that has not been exercised and any payments in cash, Stock or other consideration not received by a grantee, a grantee shall have no rights greater than those of a general creditor of the Company unless the Committee shall otherwise expressly so determine in connection with any Award.

SECTION 14. GENERAL PROVISIONS

(a) No Distribution; Compliance with Legal Requirements. The Committee may require each person acquiring Shares pursuant to an Award to represent to and agree with the Company in writing that such person is acquiring the Shares without a view to distribution thereof. No Shares shall be issued pursuant to an Award until all applicable securities law and other legal and stock exchange or similar requirements have been satisfied. The Committee may require the placing of such stop-orders and restrictive legends on certificates for Stock and Awards as it deems appropriate.

(b) Delivery of Stock Certificates. Stock certificates to grantees under the Plan shall be deemed delivered for all purposes when the Company or a stock transfer agent of the Company shall have mailed such certificates in the United States mail, addressed to the grantee, at the grantee's last known address on file with the Company; provided that stock certificates to be held in escrow pursuant to Section 9 of the Plan shall be deemed delivered when the Company shall have recorded the issuance in its records. Uncertificated Stock shall be deemed delivered for all purposes when the Company or a stock transfer agent of the Company shall have given to the grantee by electronic mail (with proof of receipt) or by United States mail, addressed to the grantee, at the grantee's last known address on file with the Company, notice of issuance and recorded the issuance in its records (which may include electronic "book entry" records).

(c) No Employment Rights**.** The adoption of the Plan and the grant of Awards do not confer upon any Person any right to continued employment or Service Relationship with the Company or any Subsidiary.

(d) Trading Policy Restrictions. Option exercises and other Awards under the Plan shall be subject to the Company's insider trading policy-related restrictions, terms and conditions as may be established by the Committee, or in accordance with policies set by the Committee, from time to time.

(e) Designation of Beneficiary. Each grantee to whom an Award has been made under the Plan may designate a beneficiary or beneficiaries to exercise any Award on or after the grantee's death or receive any payment under any Award payable on or after the grantee's death. Any such designation shall be on a form provided for that purpose by the Committee and shall not be effective until received by the Committee. If no beneficiary has been designated by a deceased grantee, or if the designated beneficiaries have predeceased the grantee, the beneficiary shall be the grantee's estate.

(f) Legend. Any certificate(s) representing the Shares shall carry substantially the following legend (and with respect to uncertificated Stock, the book entries evidencing such shares shall contain the following notation):

> The transferability of this certificate and the shares of stock represented hereby are subject to the restrictions, terms and conditions (including repurchase and restrictions against transfers) contained in the Beam Therapeutics Inc. 2017 Stock Option and Grant Plan and any agreements entered into thereunder by and between the company and the holder of this certificate (a copy of which is available at the offices of the company for examination).

(g) Information to Holders of Options. In the event the Company is relying on the exemption from the registration requirements of Section 12(g) of the Exchange Act contained in paragraph (f)(1) of Rule 12h-1 of the Exchange Act, the Company shall provide the information described in Rule 701(e)(3), (4) and (5) of the Securities Act to all holders of Options in accordance with the requirements thereunder. The foregoing notwithstanding, the Company shall not be required to provide such information unless the optionholder has agreed in writing, on a form prescribed by the Company, to keep such information confidential.

SECTION 15. EFFECTIVE DATE OF PLAN

The Plan shall become effective upon adoption by the Board and shall be approved by stockholders in accordance with applicable state law and the Company's certificate of incorporation and By-Laws within 12 months thereafter. If the stockholders fail to approve the Plan within 12 months after its adoption by the Board of Directors, then any Awards granted or sold under the Plan shall be rescinded and no additional grants or sales shall thereafter be made under the Plan. Subject to such approval by stockholders and to the requirement that no Shares may be issued hereunder prior to such approval, Stock Options and other Awards may be granted hereunder on and after adoption of the Plan by the Board. No grants of Stock Options and other Awards may be made hereunder after the tenth anniversary of the date the Plan is adopted by the Board or the date the Plan is approved by the Company's stockholders, whichever is earlier.

SECTION 16. GOVERNING LAW

This Plan, all Awards and any controversy arising out of or relating to this Plan and all Awards shall be governed by and construed in accordance with the General Corporation Law of

the State of Delaware as to matters within the scope thereof, and as to all other matters shall be governed by and construed in accordance with the internal laws of the Commonwealth of Massachusetts, without regard to conflict of law principles that would result in the application of any law other than the law of the State of the Commonwealth of Massachusetts.

DATE ADOPTED BY THE BOARD OF DIRECTORS: June 27, 2017

DATE APPROVED BY THE STOCKHOLDERS: June 24, 2017

Exhibit 10.9

FORM OF RESTRICTED STOCK AWARD NOTICE
UNDER THE BEAM THERAPEUTICS INC.
2017 STOCK OPTION AND GRANT PLAN

Pursuant to the Beam Therapeutics Inc. 2017 Stock Option and Grant Plan (the "Plan"), Beam Therapeutics Inc., a Delaware corporation (together with any successor, the "Company"), hereby grants, sells and issues to the individual named below, the Shares at the Per Share Purchase Price, subject to the terms and conditions set forth in this Restricted Stock Award Notice (the "Award Notice"), the attached Restricted Stock Agreement (the "Agreement") and the Plan. The Grantee agrees to the provisions set forth herein and acknowledges that each such provision is a material condition of the Company's agreement to issue and sell the Shares to him or her. The Company hereby acknowledges receipt of $**[ ]** in full payment for the Shares. All references to share prices and amounts herein shall be equitably adjusted to reflect stock splits, stock dividends, recapitalizations, mergers, reorganizations and similar changes affecting the capital stock of the Company, and any shares of capital stock of the Company received on or in respect of Shares in connection with any such event (including any shares of capital stock or any right, option or warrant to receive the same or any security convertible into or exchangeable for any such shares or received upon conversion of any such shares) shall be subject to this Agreement on the same basis and extent at the relevant time as the Shares in respect of which they were issued, and shall be deemed Shares as if and to the same extent they were issued at the date hereof.

Name of Grantee: (the "Grantee")

No. of Shares: Shares of Common Stock (the "Shares")

Grant Date: ,

Date of Purchase of Shares: ,

Vesting Commencement Date: , (the "Vesting Commencement Date") Per

Share Purchase Price: $ (the "Per Share Purchase Price")

Vesting Schedule: [ ]

Attachments: Restricted Stock Agreement, 2017 Stock Option and Grant Plan

FORM OF RESTRICTED STOCK AGREEMENT
UNDER THE BEAM THERAPEUTICS INC.
2017 STOCK OPTION AND GRANT PLAN

All capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Award Notice and the Plan.

1. Purchase and Sale of Shares; Vesting; Investment Representations.

(a) Purchase and Sale. The Company hereby sells to the Grantee, and the Grantee hereby purchases from the Company, the number of Shares set forth in the Award Notice for the Per Share Purchase Price.

(b) Vesting. Initially, all of the Shares are non-transferable and subject to a substantial risk of forfeiture and are Shares of Restricted Stock. The risk of forfeiture shall lapse with respect to the Shares on the respective dates indicated on the Vesting Schedule set forth in the Award Notice.

(c) Investment Representations. In connection with the purchase and sale of the Shares contemplated by Section 1(a) above, the Grantee hereby represents and warrants to the Company as follows:

(i) The Grantee is purchasing the Shares for the Grantee's own account for investment only, and not for resale or with a view to the distribution thereof.

(ii) The Grantee has had such an opportunity as he or she has deemed adequate to obtain from the Company such information as is necessary to permit him or her to evaluate the merits and risks of the Grantee's investment in the Company and has consulted with the Grantee's own advisers with respect to the Grantee's investment in the Company.

(iii) The Grantee has sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

(iv) The Grantee can afford a complete loss of the value of the Shares and is able to bear the economic risk of holding such Shares for an indefinite period.

(v) The Grantee understands that the Shares are not registered under the Act (it being understood that the Shares are being issued and sold in reliance on the exemption provided in Rule 701 thereunder) or any applicable state securities or "blue sky" laws and may not be sold or otherwise transferred or disposed of in the absence of an effective registration statement under the Act and under any applicable state securities or "blue sky" laws (or exemptions from the registration requirements thereof). The Grantee further acknowledges that certificates representing the Shares will bearrestrictive legends reflecting the foregoing and/or that book entries for uncertificated Shares will include similar restrictive notations.

(vi) The Grantee has read and understands the Plan and acknowledges and agrees that the Shares are subject to all of the relevant terms of the Plan, including without limitation, the transfer restrictions set forth in Section 9 of the Plan.

(vii) The Grantee understands and agrees that the Company has a right of first refusal with respect to the Shares pursuant to Section 9(b) of the Plan.

(viii) The Grantee understands and agree that the Company has certain repurchase rights with respect to the Shares pursuant to Section 9(c) of the Plan.

(ix) The Grantee understands and agrees that the Grantee may not sell or otherwise transfer or dispose of the Shares for a period of time following the effective date of a public offering by the Company as described in Section 9(f) of the Plan.

2. Repurchase Right. Upon a Termination Event, the Company shall have the right to repurchase Shares of Restricted Stock that are unvested as of the date of such Termination Event as set forth in Section 9(c) of the Plan.

3. Restrictions on Transfer of Shares. The Shares (whether or not vested) shall be subject to certain transfer restrictions and other limitations including, without limitation, the provisions contained in Section 9 of the Plan

4. Incorporation of Plan. Notwithstanding anything herein to the contrary, this Restricted Stock Award shall be subject to and governed by all the terms and conditions of the Plan.

5. Miscellaneous Provisions.

(a) Record Owner; Dividends. The Grantee and any Permitted Transferees, during the duration of this Agreement, shall be considered the record owners of and shall be entitled to vote the Shares if and to the extent the Shares are entitled to voting rights. The Grantee and any Permitted Transferees shall be entitled to receive all dividends and any other distributions declared on the Shares; provided, however, that the Company is under no duty to declare any such dividends or to make any such distribution.

(b) Section 83(b) Election. The Grantee shall consult with the Grantee's tax advisor to determine whether it would be appropriate for the Grantee to make an election under Section 83(b) of the Code with respect to this Award. Any such election must be filed with the Internal Revenue Service within 30 days of the date of this Award. If the Grantee makes an election under Section 83(b) of the Code, the Grantee shall give prompt notice to the Company (and provide a copy of such election to the Company).

(c) Equitable Relief. The parties hereto agree and declare that legal remedies may be inadequate to enforce the provisions of this Agreement and that equitable relief, including specific performance and injunctive relief, may be used to enforce the provisions of this Agreement.

(d) Change and Modifications. This Agreement may not be orally changed, modified or terminated, nor shall any oral waiver of any of its terms be effective. This Agreement may be changed, modified or terminated only by an agreement in writing signed by the Company and the Grantee.

(e) Governing Law. This Agreement shall be governed by and construed in accordance with the General Corporation Law of the State of Delaware as to matters within the scope thereof, and as to all other matters shall be governed by and construed in accordance with the internal laws of the Commonwealth of Massachusetts, without regard to conflict of law principles that would result in the application of any law other than the law of the Commonwealth of Massachusetts.

(f) Headings. The headings are intended only for convenience in finding the subject matter and do not constitute part of the text of this Agreement and shall not be considered in the interpretation of this Agreement.

(g) Saving Clause. If any provision(s) of this Agreement shall be determined to be illegal or unenforceable, such determination shall in no manner affect the legality or enforceability of any other provision hereof.

(h) Notices. All notices, requests, consents and other communications shall be in writing and be deemed given when delivered personally, by telex or facsimile transmission or when received if mailed by first class registered or certified mail, postage prepaid. Notices to the Company or the Grantee shall be addressed as set forth underneath their signatures below, or to such other address or addresses as may have been furnished by such party in writing to the other.

(i) Benefit and Binding Effect. This Agreement shall be binding upon and shall inure to the benefit of the parties hereto, their respective successors, assigns, and legal representatives. The Company has the right to assign this Agreement, and such assignee shall become entitled to all the rights of the Company hereunder to the extent of such assignment.

(j) Counterparts. For the convenience of the parties and to facilitate execution, this Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same document.

(k) Integration. This Agreement constitutes the entire agreement between the parties with respect to this Award and supersedes all prior agreements and discussions between the parties concerning such subject matter.

6. Dispute Resolution.

(a) Except as provided below, any dispute arising out of or relating to the Plan or the Shares, this Agreement, or the breach, termination or validity of the Plan, the Shares or this Agreement, shall be finally settled by binding arbitration conducted expeditiously in

accordance with the J.A.M.S./Endispute Comprehensive Arbitration Rules and Procedures (the "J.A.M.S. Rules"). The arbitration shall be governed by the United States Arbitration Act, 9 U.S.C. Sections 1 - 16, and judgment upon the award rendered by the arbitrators may be entered by any court having jurisdiction thereof. The place of arbitration shall be Boston, Massachusetts.

(b) The arbitration shall commence within 60 days of the date on which a written demand for arbitration is filed by any party hereto. In connection with the arbitration proceeding, the arbitrator shall have the power to order the production of documents by each party and any third-party witnesses. In addition, each party may take up to three depositions as of right, and the arbitrator may in his or her discretion allow additional depositions upon good cause shown by the moving party. However, the arbitrator shall not have the power to order the answering of interrogatories or the response to requests for admission. In connection with any arbitration, each party to the arbitration shall provide to the other, no later than seven business days before the date of the arbitration, the identity of all persons that may testify at the arbitration and a copy of all documents that may be introduced at the arbitration or considered or used by a party's witness or expert. The arbitrator's decision and award shall be made and delivered within six months of the selection of the arbitrator. The arbitrator's decision shall set forth a reasoned basis for any award of damages or finding of liability. The arbitrator shall not have power to award damages in excess of actual compensatory damages and shall not multiply actual damages or award punitive damages, and each party hereby irrevocably waives any claim to such damages.

(c) The Company, the Grantee, each party to the Agreement and any other holder of Shares issued pursuant to this Agreement (each, a "Party") covenants and agrees that such party will participate in the arbitration in good faith. This Section 6 applies equally to requests for temporary, preliminary or permanent injunctive relief, except that in the case of temporary or preliminary injunctive relief any party may proceed in court without prior arbitration for the limited purpose of avoiding immediate and irreparable harm.

(d) Each Party (i) hereby irrevocably submits to the jurisdiction of any United States District Court of competent jurisdiction for the purpose of enforcing the award or decision in any such proceeding, (ii) hereby waives, and agrees not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the above named courts, that its property is exempt or immune from attachment or execution (except as protected by applicable law), that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court, and (iii) hereby waives and agrees not to seek any review by any court of any other jurisdiction which may be called upon to grant an enforcement of the judgment of any such court. Each Party hereby consents to service of process by registered mail at the address to which notices are to be given. Each Party agrees that its, his or her submission to jurisdiction and its, his or her consent to service of process by mail is made for the express benefit of each other Party. Final judgment against any Party in any such action, suit or proceeding may be enforced in other jurisdictions by suit, action or proceeding on the judgment, or in any other manner provided by or pursuant to the laws of such other jurisdiction.

[SIGNATURE PAGE FOLLOWS]

The foregoing Restricted Stock Agreement is hereby accepted and the terms and conditions thereof are hereby agreed to by the undersigned as of the date of purchase of Shares above written.

BEAM THERAPEUTICS INC.

By: _____
Name:
Title:

Address:

_____

_____

_____

The undersigned hereby acknowledges receiving and reviewing a copy of the Plan, including, without limitation, Section 9 thereof and understands that the Shares granted hereby are subject to the terms of the Plan and of this Agreement. This Agreement is hereby accepted, and the terms and conditions of the Plan, the Award Notice and this Agreement, SPECIFICALLY INCLUDING THE ARBITRATION PROVISIONS SET FORTH IN SECTION 6 OF THIS AGREEMENT, are hereby agreed to, by the undersigned as of the date first above written.

GRANTEE:

_____
Name:

Address:

_____

_____

_____

[SPOUSE'S CONSENT[1]
I acknowledge that I have read the foregoing Restricted Stock Agreement and understand the contents thereof.

_____]

[1] A spouse's consent is required only if the Grantee's state of residence is one of the following community property states: Arizona, California, Idaho, Louisiana, New Mexico, Nevada, Texas, Washington and Wisconsin.

Exhibit 10.10

FORM OF INCENTIVE STOCK OPTION GRANT NOTICE
UNDER THE BEAM THERAPEUTICS INC.
2017 STOCK OPTION AND GRANT PLAN

Pursuant to the Beam Therapeutics Inc. 2017 Stock Option and Grant Plan (the "Plan"), Beam Therapeutics Inc., a Delaware corporation (together with any successor, the "Company"), has granted to the individual named below, an option (the "Stock Option") to purchase on or prior to the Expiration Date, or such earlier date as is specified herein, all or any part of the number of shares of Common Stock, par value $0.01 per share ("Common Stock"), of the Company indicated below (the "Shares"), at the Option Exercise Price per share, subject to the terms and conditions set forth in this Incentive Stock Option Grant Notice (the "Grant Notice"), the attached Incentive Stock Option Agreement (the "Agreement") and the Plan. This Stock Option is intended to qualify as an "incentive stock option" as defined in Section 422(b) of the Internal Revenue Code of 1986, as amended from time to time (the "Code"). To the extent that any portion of the Stock Option does not so qualify, it shall be deemed a non-qualified stock option.

Name of Optionee:	(the "Optionee")
No. of Shares:	Shares of Common Stock
Grant Date:	
Vesting Commencement Date:	(the "Vesting Commencement Date")
Expiration Date:	(the "Expiration Date")
Option Exercise Price/Share:	$ (the "Option Exercise Price")
Vesting Schedule:	1/24th of the shares shall vest each month commencing with the Vesting Commencement Date until fully vested.

Attachments: Incentive Stock Option Agreement, 2017 Stock Option and Grant Plan

FORM OF INCENTIVE STOCK OPTION AGREEMENT
UNDER THE BEAM THERAPEUTICS INC.
2017 STOCK OPTION AND GRANT PLAN

All capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Grant Notice and the Plan.

1. Vesting, Exercisability and Termination.

(a) No portion of this Stock Option may be exercised until such portion shall have vested and become exercisable.

(b) Except as set forth below, and subject to the determination of the Committee in its sole discretion to accelerate the vesting schedule hereunder, this Stock Option shall be vested and exercisable on the respective dates indicated below:

(i) This Stock Option shall initially be unvested and unexercisable.

(ii) This Stock Option shall vest and become exercisable in accordance with the Vesting Schedule set forth in the Grant Notice.

(c) Termination. Except as may otherwise be provided by the Committee, if the Optionee's Service Relationship is terminated, the period within which to exercise this Stock Option will be subject to earlier termination as set forth below (and if not exercised within such period, shall thereafter terminate subject, in each case, to Section 3(c) of the Plan):

(i) Termination Due to Death or Disability. If the Optionee's Service Relationship terminates by reason of such Optionee's death or Disability, this Stock Option may be exercised, to the extent exercisable on the date of such termination, by the Optionee, the Optionee's legal representative or legatee for a period of 12 months from the date of death or Disability or until the Expiration Date, if earlier.

(ii) Other Termination. If the Optionee's Service Relationship terminates for any reason other than death or Disability, and unless otherwise determined by the Committee, this Stock Option may be exercised, to the extent exercisable on the date of termination, for a period of 90 days from the date of termination or until the Expiration Date, if earlier; provided however, if the Optionee's Service Relationship is terminated for Cause, this Stock Option shall terminate immediately upon the date of such termination.

For purposes hereof, the Committee's determination of the reason for termination of the Optionee's Service Relationship shall be conclusive and binding on the Optionee and his or her representatives or legatees. Any portion of this Stock Option that is not vested and exercisable on the date of termination of the Service Relationship shall terminate immediately and be null and void.

(d) It is understood and intended that this Stock Option is intended to qualify as an "incentive stock option" as defined in Section 422 of the Code to the extent permitted under applicable law. Accordingly, the Optionee understands that in order to obtain the benefits of an incentive stock option under Section 422 of the Code, no sale or other disposition may be made of Shares for which incentive stock option treatment is desired within the one-year period beginning on the day after the day of the transfer of such Shares to him or her, nor within the two-year period beginning on the day after Grant Date of this Stock Option and further that this Stock Option must be exercised within three months after termination of employment as an employee (or 12 months in the case of death or disability) to qualify as an incentive stock option. If the Optionee disposes (whether by sale, gift, transfer or otherwise) of any such Shares within either of these periods, he or she will notify the Company within 30 days after such disposition. The Optionee also agrees to provide the Company with any information concerning any such dispositions required by the Company for tax purposes. Further, to the extent this Stock Option and any other incentive stock options of the Optionee having an aggregate Fair Market Value in excess of $100,000 (determined as of the Grant Date) first become exercisable in any year, such options will not qualify as incentive stock options.

2. Exercise of Stock Option.

(a) The Optionee may exercise this Stock Option only in the following manner: Prior to the Expiration Date, the Optionee may deliver a Stock Option exercise notice (an "Exercise Notice") in the form of Appendix A hereto indicating his or her election to purchase some or all of the Shares with respect to which this Stock Option is then exercisable. Such notice shall specify the number of Shares to be purchased. Payment of the purchase price may be made by one or more of the methods described in Section 5 of the Plan, subject to the limitations contained in such Section of the Plan, including the requirement that the Committee specifically approve in advance certain payment methods.

(b) Notwithstanding any other provision hereof or of the Plan, no portion of this Stock Option shall be exercisable after the Expiration Date.

3. Incorporation of Plan. Notwithstanding anything herein to the contrary, this Stock Option shall be subject to and governed by all the terms and conditions of the Plan.

4. Transferability of Stock Option. This Stock Option is personal to the Optionee and is not transferable by the Optionee in any manner other than by will or by the laws of descent and distribution. The Stock Option may be exercised during the Optionee's lifetime only by the Optionee (or by the Optionee's guardian or personal representative in the event of the Optionee's incapacity). The Optionee may elect to designate a beneficiary by providing written notice of the name of such beneficiary to the Company, and may revoke or change such designation at any time by filing written notice of revocation or change with the Company; such beneficiary may exercise the Optionee's Stock Option in the event of the Optionee's death to the extent provided herein. If the Optionee does not designate a beneficiary, or if the designated beneficiary predeceases the Optionee, the legal representative of the Optionee may exercise this Stock Option to the extent provided herein in the event of the Optionee's death.

5. Restrictions on Transfer of Shares. The Shares acquired upon exercise of the Stock Option shall be subject to certain transfer restrictions and other limitations including, without limitation, the provisions contained in Section 9 of the Plan.

6. Miscellaneous Provisions.

(a) Equitable Relief. The parties hereto agree and declare that legal remedies may be inadequate to enforce the provisions of this Agreement and that equitable relief, including specific performance and injunctive relief, may be used to enforce the provisions of this Agreement.

(b) Adjustments for Changes in Capital Structure. If, as a result of any reorganization, recapitalization, reincorporation, reclassification, stock dividend, stock split, reverse stock split or other similar change in the Common Stock, the outstanding shares of Common Stock are increased or decreased or are exchanged for a different number or kind of securities of the Company, the restrictions contained in this Agreement shall apply with equal force to additional and/or substitute securities, if any, received by the Optionee in exchange for, or by virtue of his or her ownership of, this Stock Option or Shares acquired pursuant thereto.

(c) Change and Modifications. This Agreement may not be orally changed, modified or terminated, nor shall any oral waiver of any of its terms be effective. This Agreement may be changed, modified or terminated only by an agreement in writing signed by the Company and the Optionee.

(d) Governing Law. This Agreement shall be governed by and construed in accordance with the General Corporation Law of the State of Delaware as to matters within the scope thereof, and as to all other matters shall be governed by and construed in accordance with the internal laws of the Commonwealth of Massachusetts, without regard to conflict of law principles that would result in the application of any law other than the law of the Commonwealth of Massachusetts.

(e) Headings. The headings are intended only for convenience in finding the subject matter and do not constitute part of the text of this Agreement and shall not be considered in the interpretation of this Agreement.

(f) Saving Clause. If any provision(s) of this Agreement shall be determined to be illegal or unenforceable, such determination shall in no manner affect the legality or enforceability of any other provision hereof.

(g) Notices. All notices, requests, consents and other communications shall be in writing and be deemed given when delivered personally, by telex or facsimile transmission or when received if mailed by first class registered or certified mail, postage prepaid. Notices to the Company or the Optionee shall be addressed as set forth underneath their signatures below, or to such other address or addresses as may have been furnished by such party in writing to the other.

(h) Benefit and Binding Effect. This Agreement shall be binding upon and shall inure to the benefit of the parties hereto, their respective successors, assigns, and legal representatives. The Company has the right to assign this Agreement, and such assignee shall become entitled to all the rights of the Company hereunder to the extent of such assignment.

(i) Counterparts. For the convenience of the parties and to facilitate execution, this Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same document.

(j) Integration. This Agreement constitutes the entire agreement between the parties with respect to this Stock Option and supersedes all prior agreements and discussions between the parties concerning such subject matter.

7. Dispute Resolution.

(a) Except as provided below, any dispute arising out of or relating to the Plan or this Stock Option, this Agreement, or the breach, termination or validity of the Plan, this Stock Option or this Agreement, shall be finally settled by binding arbitration conducted expeditiously in accordance with the J.A.M.S./Endispute Comprehensive Arbitration Rules and Procedures (the "J.A.M.S. Rules"). The arbitration shall be governed by the United States Arbitration Act, 9 U.S.C. Sections 1 16, and judgment upon the award rendered by the arbitrators may be entered by any court having jurisdiction thereof. The place of arbitration shall be Boston, Massachusetts.

(b) The arbitration shall commence within 60 days of the date on which a written demand for arbitration is filed by any party hereto. In connection with the arbitration proceeding, the arbitrator shall have the power to order the production of documents by each party and any third-party witnesses. In addition, each party may take up to three depositions as of right, and the arbitrator may in his or her discretion allow additional depositions upon good cause shown by the moving party. However, the arbitrator shall not have the power to order the answering of interrogatories or the response to requests for admission. In connection with any arbitration, each party to the arbitration shall provide to the other, no later than seven business days before the date of the arbitration, the identity of all persons that may testify at the arbitration and a copy of all documents that may be introduced at the arbitration or considered or used by a party's witness or expert. The arbitrator's decision and award shall be made and delivered within six months of the selection of the arbitrator. The arbitrator's decision shall set forth a reasoned basis for any award of damages or finding of liability. The arbitrator shall not have power to award damages in excess of actual compensatory damages and shall not multiply actual damages or award punitive damages, and each party hereby irrevocably waives any claim to such damages.

(c) The Company, the Optionee, each party to the Agreement and any other holder of Shares issued pursuant to this Agreement (each, a "Party") covenants and agrees that such party will participate in the arbitration in good faith. This Section 7 applies equally to requests for temporary, preliminary or permanent injunctive relief, except that in the case of temporary or preliminary injunctive relief any party may proceed in court without prior arbitration for the limited purpose of avoiding immediate and irreparable harm.

(d) Each Party (i) hereby irrevocably submits to the jurisdiction of any United States District Court of competent jurisdiction for the purpose of enforcing the award or decision

in any such proceeding, (ii) hereby waives, and agrees not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the above named courts, that its property is exempt or immune from attachment or execution (except as protected by applicable law), that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court, and (iii) hereby waives and agrees not to seek any review by any court of any other jurisdiction which may be called upon to grant an enforcement of the judgment of any such court. Each Party hereby consents to service of process by registered mail at the address to which notices are to be given. Each Party agrees that its, his or her submission to jurisdiction and its, his or her consent to service of process by mail is made for the express benefit of each other Party. Final judgment against any Party in any such action, suit or proceeding may be enforced in other jurisdictions by suit, action or proceeding on the judgment, or in any other manner provided by or pursuant to the laws of such other jurisdiction.

[SIGNATURE PAGE FOLLOWS]

The foregoing Agreement is hereby accepted and the terms and conditions thereof hereby agreed to by the undersigned as of the date first above written.

BEAM THERAPEUTICS INC.

By: _____
Name:
Title:

Address:

_____

_____

_____

The undersigned hereby acknowledges receiving and reviewing a copy of the Plan, including, without limitation, Section 9 thereof, and understands that this Stock Option is subject to the terms of the Plan and of this Agreement. This Agreement is hereby accepted, and the terms and conditions of the Plan, the Grant Notice and this Agreement, SPECIFICALLY INCLUDING THE ARBITRATION PROVISIONS SET FORTH IN SECTION 7 OF THIS AGREEMENT, are hereby agreed to, by the undersigned as of the date first above written.

OPTIONEE:

_____
Name:

Address:

_____

_____

_____

[SPOUSE'S CONSENT[1]
I acknowledge that I have read the foregoing Incentive Stock Option Agreement and understand the contents thereof.

_____]

[1] A spouse's consent is recommended only if the Optionee's state of residence is one of the following community property states: Arizona, California, Idaho, Louisiana, Nevada, New Mexico, Texas, Washington and Wisconsin.

DESIGNATED BENEFICIARY:

_____

Beneficiary's Address:

_____

_____

_____

Appendix A

STOCK OPTION EXERCISE NOTICE

Beam Therapeutics Inc.
Attention: President

_____

_____

Pursuant to the terms of the grant notice and stock option agreement between the undersigned and Beam Therapeutics Inc. (the "Company") dated (the "Agreement") under the Beam Therapeutics Inc. 2017 Stock Option and Grant Plan, I, [Insert Name] , hereby [Circle One] partially/fully exercise such option by including herein payment in the amount of $ representing the purchase price for [Fill in number of Shares] Shares. I have chosen the following form(s) of payment:

☐ 1. Cash

☐ 2. Certified or bank check payable to Beam Therapeutics Inc.

☐ 3. Other (as referenced in the Agreement and described in the Plan (please describe))
_____.

In connection with my exercise of the option as set forth above, I hereby represent and warrant to the Company as follows:

(i) I am purchasing the Shares for my own account for investment only, and not for resale or with a view to the distribution thereof.

(ii) I have had such an opportunity as I have deemed adequate to obtain from the Company such information as is necessary to permit me to evaluate the merits and risks of my investment in the Company and have consulted with my own advisers with respect to my investment in the Company.

(iii) I have sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

(iv) I can afford a complete loss of the value of the Shares and am able to bear the economic risk of holding such Shares for an indefinite period of time.

(v) I understand that the Shares may not be registered under the Securities Act of 1933 (it being understood that the Shares are being issued and sold in reliance on the exemption provided in Rule 701 thereunder) or any applicable state securities or "blue sky" laws and may not be sold or otherwise transferred or disposed of in the absence of an effective registration statement under the Securities Act of 1933 and under any applicable state securities or "blue sky" laws (or exemptions from the

registration requirement thereof). I further acknowledge that certificates representing Shares will bear restrictive legends reflecting the foregoing and/or that book entries for uncertificated Shares will include similar restrictive notations.

(vi) I have read and understand the Plan and acknowledge and agree that the Shares are subject to all of the relevant terms of the Plan, including without limitation, the transfer restrictions set forth in Section 9 of the Plan.

(vii) I understand and agree that the Company has a right of first refusal with respect to the Shares pursuant to Section 9(b) of the Plan.

(viii) I understand and agree that the Company has certain repurchase rights with respect to the Shares pursuant to Section 9(c) of the Plan.

(ix) I understand and agree that I may not sell or otherwise transfer or dispose of the Shares for a period of time following the effective date of a public offering by the Company as described in Section 9(f) of the Plan.

Sincerely yours,

_____

Name:

Address:

_____

_____

_____

Date: _____

FORM OF NON-QUALIFIED STOCK OPTION GRANT NOTICE
UNDER THE BEAM THERAPEUTICS INC.
2017 STOCK OPTION AND GRANT PLAN

Pursuant to the Beam Therapeutics Inc. 2017 Stock Option and Grant Plan (the "Plan"), Beam Therapeutics Inc., a Delaware corporation (together with any successor, the "Company"), has granted to the individual named below, an option (the "Stock Option") to purchase on or prior to the Expiration Date, or such earlier date as is specified herein, all or any part of the number of shares of Common Stock, par value $0.01 per share ("Common Stock"), of the Company indicated below (the "Shares"), at the Option Exercise Price per share, subject to the terms and conditions set forth in this Non-Qualified Stock Option Grant Notice (the "Grant Notice"), the attached Non-Qualified Stock Option Agreement (the "Agreement") and the Plan. This Stock Option is not intended to qualify as an "incentive stock option" as defined in Section 422(b) of the Internal Revenue Code of 1986, as amended from time to time (the "Code").

Name of Optionee:		(the "Optionee")
No. of Shares:		Shares of Common Stock
Grant Date:		
Vesting Commencement Date:		(the "Vesting Commencement Date")
Expiration Date:		(the "Expiration Date")
Option Exercise Price/Share:	$	(the "Option Exercise Price")
Vesting Schedule:		

Attachments: Non-Qualified Stock Option Agreement, 2017 Stock Option and Grant Plan

FORM OF NON-QUALIFIED STOCK OPTION AGREEMENT
UNDER THE BEAM THERAPEUTICS INC.
2017 STOCK OPTION AND GRANT PLAN

All capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Grant Notice and the Plan.

1. Vesting, Exercisability and Termination.

(a) No portion of this Stock Option may be exercised until such portion shall have vested and become exercisable.

(b) Except as set forth below, and subject to the determination of the Committee in its sole discretion to accelerate the vesting schedule hereunder, this Stock Option shall be vested and exercisable on the respective dates indicated below:

(i) This Stock Option shall initially be unvested and unexercisable.

(ii) This Stock Option shall vest and become exercisable in accordance with the Vesting Schedule set forth in the Grant Notice.

(c) Termination. Except as may otherwise be provided by the Committee, if the Optionee's Service Relationship is terminated, the period within which to exercise this Stock Option will be subject to earlier termination as set forth below (and if not exercised within such period, shall thereafter terminate subject, in each case, to Section 3(c) of the Plan):

(i) Termination Due to Death or Disability. If the Optionee's Service Relationship terminates by reason of such Optionee's death or Disability, this Stock Option may be exercised, to the extent exercisable on the date of such termination, by the Optionee, the Optionee's legal representative or legatee for a period of 12 months from the date of death or Disability or until the Expiration Date, if earlier.

(ii) Other Termination. If the Optionee's Service Relationship terminates for any reason other than death or Disability, and unless otherwise determined by the Committee, this Stock Option may be exercised, to the extent exercisable on the date of termination, for a period of 90 days from the date of termination or until the Expiration Date, if earlier; provided however, if the Optionee's Service Relationship is terminated for Cause, this Stock Option shall terminate immediately upon the date of such termination.

For purposes hereof, the Committee's determination of the reason for termination of the Optionee's Service Relationship shall be conclusive and binding on the Optionee and his or her representatives or legatees and any Permitted Transferee. Any portion of this Stock Option that is not vested and exercisable on the date of termination of the Service Relationship shall terminate immediately and be null and void.

2. Exercise of Stock Option.

(a) The Optionee may exercise this Stock Option only in the following manner: Prior to the Expiration Date, the Optionee may deliver a Stock Option exercise notice (an "Exercise Notice") in the form of Appendix A hereto indicating his or her election to purchase some or all of the Shares with respect to which this Stock Option is then exercisable. Such notice shall specify the number of Shares to be purchased. Payment of the purchase price may be made by one or more of the methods described in Section 5 of the Plan, subject to the limitations contained in such Section of the Plan, including the requirement that the Committee specifically approve in advance certain payment methods.

(b) Notwithstanding any other provision hereof or of the Plan, no portion of this Stock Option shall be exercisable after the Expiration Date.

3. Incorporation of Plan. Notwithstanding anything herein to the contrary, this Stock Option shall be subject to and governed by all the terms and conditions of the Plan.

4. Transferability of Stock Option. This Stock Option is personal to the Optionee and is not transferable by the Optionee in any manner other than by will or by the laws of descent and distribution. The Stock Option may be exercised during the Optionee's lifetime only by the Optionee (or by the Optionee's guardian or personal representative in the event of the Optionee's incapacity). The Optionee may elect to designate a beneficiary by providing written notice of the name of such beneficiary to the Company, and may revoke or change such designation at any time by filing written notice of revocation or change with the Company; such beneficiary may exercise the Optionee's Stock Option in the event of the Optionee's death to the extent provided herein. If the Optionee does not designate a beneficiary, or if the designated beneficiary predeceases the Optionee, the legal representative of the Optionee may exercise this Stock Option to the extent provided herein in the event of the Optionee's death.

5. Restrictions on Transfer of Shares. The Shares acquired upon exercise of the Stock Option shall be subject to certain transfer restrictions and other limitations including, without limitation, the provisions contained in Section 9 of the Plan.

6. Miscellaneous Provisions.

(a) Equitable Relief. The parties hereto agree and declare that legal remedies may be inadequate to enforce the provisions of this Agreement and that equitable relief, including specific performance and injunctive relief, may be used to enforce the provisions of this Agreement.

(b) Adjustments for Changes in Capital Structure. If, as a result of any reorganization, recapitalization, reincorporation, reclassification, stock dividend, stock split, reverse stock split or other similar change in the Common Stock, the outstanding shares of Common Stock are increased or decreased or are exchanged for a different number or kind of securities of the Company, the restrictions contained in this Agreement shall apply with equal force to additional and/or substitute securities, if any, received by the Optionee in exchange for, or by virtue of his or her ownership of, this Stock Option or Shares acquired pursuant thereto.

(c) Change and Modifications. This Agreement may not be orally changed, modified or terminated, nor shall any oral waiver of any of its terms be effective. This Agreement may be changed, modified or terminated only by an agreement in writing signed by the Company and the Optionee.

(d) Governing Law. This Agreement shall be governed by and construed in accordance with the General Corporation Law of the State of Delaware as to matters within the scope thereof, and as to all other matters shall be governed by and construed in accordance with the internal laws of the Commonwealth of Massachusetts, without regard to conflict of law principles that would result in the application of any law other than the law of the Commonwealth of Massachusetts.

(e) Headings. The headings are intended only for convenience in finding the subject matter and do not constitute part of the text of this Agreement and shall not be considered in the interpretation of this Agreement.

(f) Saving Clause. If any provision(s) of this Agreement shall be determined to be illegal or unenforceable, such determination shall in no manner affect the legality or enforceability of any other provision hereof.

(g) Notices. All notices, requests, consents and other communications shall be in writing and be deemed given when delivered personally, by telex or facsimile transmission or when received if mailed by first class registered or certified mail, postage prepaid. Notices to the Company or the Optionee shall be addressed as set forth underneath their signatures below, or to such other address or addresses as may have been furnished by such party in writing to the other.

(h) Benefit and Binding Effect. This Agreement shall be binding upon and shall inure to the benefit of the parties hereto, their respective successors, assigns, and legal representatives. The Company has the right to assign this Agreement, and such assignee shall become entitled to all the rights of the Company hereunder to the extent of such assignment.

(i) Counterparts. For the convenience of the parties and to facilitate execution, this Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same document.

(j) Integration. This Agreement constitutes the entire agreement between the parties with respect to this Stock Option and supersedes all prior agreements and discussions between the parties concerning such subject matter.

7. Dispute Resolution.

(a) Except as provided below, any dispute arising out of or relating to the Plan or this Stock Option, this Agreement, or the breach, termination or validity of the Plan, this Stock Option or this Agreement, shall be finally settled by binding arbitration conducted expeditiously in accordance with the J.A.M.S./Endispute Comprehensive Arbitration Rules and Procedures (the “J.A.M.S. Rules”). The arbitration shall be governed by the United States Arbitration Act, 9 U.S.C. Sections 1-16, and judgment upon the award rendered by the arbitrators may be entered by any court having jurisdiction thereof. The place of arbitration shall be Boston, Massachusetts.

(b) The arbitration shall commence within 60 days of the date on which a written demand for arbitration is filed by any party hereto. In connection with the arbitration proceeding, the arbitrator shall have the power to order the production of documents by each party and any third-party witnesses. In addition, each party may take up to three depositions as of right, and the arbitrator may in his or her discretion allow additional depositions upon good cause shown by the moving party. However, the arbitrator shall not have the power to order the answering of interrogatories or the response to requests for admission. In connection with any arbitration, each party to the arbitration shall provide to the other, no later than seven business days before the date of the arbitration, the identity of all persons that may testify at the arbitration and a copy of all documents that may be introduced at the arbitration or considered or used by a party's witness or expert. The arbitrator's decision and award shall be made and delivered within six months of the selection of the arbitrator. The arbitrator's decision shall set forth a reasoned basis for any award of damages or finding of liability. The arbitrator shall not have power to award damages in excess of actual compensatory damages and shall not multiply actual damages or award punitive damages, and each party hereby irrevocably waives any claim to such damages.

(c) The Company, the Optionee, each party to the Agreement and any other holder of Shares issued pursuant to this Agreement (each, a "Party") covenants and agrees that such party will participate in the arbitration in good faith. This Section 7 applies equally to requests for temporary, preliminary or permanent injunctive relief, except that in the case of temporary or preliminary injunctive relief any party may proceed in court without prior arbitration for the limited purpose of avoiding immediate and irreparable harm.

(d) Each Party (i) hereby irrevocably submits to the jurisdiction of any United States District Court of competent jurisdiction for the purpose of enforcing the award or decision in any such proceeding, (ii) hereby waives, and agrees not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the above named courts, that its property is exempt or immune from attachment or execution (except as protected by applicable law), that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court, and (iii) hereby waives and agrees not to seek any review by any court of any other jurisdiction which may be called upon to grant an enforcement of the judgment of any such court. Each Party hereby consents to service of process by registered mail at the address to which notices are to be given. Each Party agrees that its, his or her submission to jurisdiction and its, his or her consent to service of process by mail is made for the express benefit of each other Party. Final judgment against any Party in any such action, suit or proceeding may be enforced in other jurisdictions by suit, action or proceeding on the judgment, or in any other manner provided by or pursuant to the laws of such other jurisdiction.

[SIGNATURE PAGE FOLLOWS]

The foregoing Agreement is hereby accepted and the terms and conditions thereof hereby agreed to by the undersigned as of the date first above written.

BEAM THERAPEUTICS INC.

By: _____
Name:
Title:

Address:

_____

_____

_____

The undersigned hereby acknowledges receiving and reviewing a copy of the Plan, including, without limitation, Section 9 thereof, and understands that this Stock Option is subject to the terms of the Plan and of this Agreement. This Agreement is hereby accepted, and the terms and conditions of the Plan, the Grant Notice and this Agreement, SPECIFICALLY INCLUDING THE ARBITRATION PROVISIONS SET FORTH IN SECTION 7 OF THIS AGREEMENT, are hereby agreed to, by the undersigned as of the date first above written.

OPTIONEE:

_____
Name:

Address:

_____

_____

_____

[SPOUSE'S CONSENT[1]
I acknowledge that I have read the
foregoing Non-Qualified Stock Option Agreement and
understand the contents thereof.

_____]

[1] A spouse's consent is recommended only if the Optionee's state of residence is one of the following community property states: Arizona, California, Idaho, Louisiana, Nevada, New Mexico, Texas, Washington and Wisconsin.

DESIGNATED BENEFICIARY:

_____

Beneficiary's Address:

_____

_____

_____

Appendix A

STOCK OPTION EXERCISE NOTICE

Beam Therapeutics Inc.
Attention: President

_____

_____

Pursuant to the terms of the grant notice and stock option agreement between the undersigned and Beam Therapeutics Inc. (the "Company") dated (the "Agreement") under the Beam Therapeutics Inc. 2017 Stock Option and Grant Plan, I, [Insert Name] , hereby [Circle One] partially/fully exercise such option by including herein payment in the amount of $ representing the purchase price for [Fill in number of Shares] Shares. I have chosen the following form(s) of payment:

☐ 1. Cash

☐ 2. Certified or bank check payable to Beam Therapeutics Inc.

☐ 3. Other (as referenced in the Agreement and described in the Plan (please describe)) _____.

In connection with my exercise of the option as set forth above, I hereby represent and warrant to the Company as follows:

(i) I am purchasing the Shares for my own account for investment only, and not for resale or with a view to the distribution thereof.

(ii) I have had such an opportunity as I have deemed adequate to obtain from the Company such information as is necessary to permit me to evaluate the merits and risks of my investment in the Company and have consulted with my own advisers with respect to my investment in the Company.

(iii) I have sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

(iv) I can afford a complete loss of the value of the Shares and am able to bear the economic risk of holding such Shares for an indefinite period of time.

(v) I understand that the Shares may not be registered under the Securities Act of 1933 (it being understood that the Shares are being issued and sold in reliance on the exemption provided in Rule 701 thereunder) or any applicable state securities or "blue sky" laws and may not be sold or otherwise transferred or disposed of in the absence of an effective registration statement under the Securities Act of 1933 and under any applicable state securities or "blue sky" laws (or exemptions from the

registration requirement thereof). I further acknowledge that certificates representing Shares will bear restrictive legends reflecting the foregoing and/or that book entries for uncertificated Shares will include similar restrictive notations.

(vi) I have read and understand the Plan and acknowledge and agree that the Shares are subject to all of the relevant terms of the Plan, including without limitation, the transfer restrictions set forth in Section 9 of the Plan.

(vii) I understand and agree that the Company has a right of first refusal with respect to the Shares pursuant to Section 9(b) of the Plan.

(viii) I understand and agree that the Company has certain repurchase rights with respect to the Shares pursuant to Section 9(c) of the Plan.

(ix) I understand and agree that I may not sell or otherwise transfer or dispose of the Shares for a period of time following the effective date of a public offering by the Company as described in Section 9(f) of the Plan.

Sincerely yours,

_____

Name:

Address:

_____

_____

_____

Date: _____

Exhibit 21.1

Subsidiary	Location
Blink Therapeutics Inc.	Delaware