Beam Therapeutics Reports Preclinical Data Highlighting Multiplex Base Editing Approach to Create Anti-CD5 CAR T-cell Investigational Therapies for T-Cell Malignancies

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CAMBRIDGE, Mass., Nov. 12, 2021 (GLOBE NEWSWIRE) -- Beam Therapeutics Inc. (Nasdaq: BEAM), a biotechnology company developing precision genetic medicines through base editing, today announced new preclinical research demonstrating the ability of the company's multiplex edited CAR T cells to target CD5-positive tumors, leading to tumor clearance *in vivo*. The data are highlighted in a poster titled, "CD5 knockout enhances the potency of multiplex base-edited allogeneic anti-CD5 CAR T-cell therapy for the treatment of T-cell malignancies," at the Society for Immunotherapy of Cancer's (SITC) 36 th Annual Meeting, being held Nov. 10-14, 2021.

CAR T therapies have the potential to address a number of T-cell malignancies, but their therapeutic potential is often hindered by technological limitations in their development and application. Beam has developed a process using base editing to simultaneously silence five target genes, including CD5 and PD1, to create allogeneic anti-CD5 CAR T-cells with enhanced effector function for potential use as off-the-shelf treatments for T-cell malignancies.

"There is a significant unmet need in the treatment of T-cell lymphomas, as some indications have particularly poor prognoses and patients with relapsed or refractory disease have few treatment options that can produce deep and durable responses," said Giuseppe Ciaramella, Ph.D., president and chief scientific officer of Beam. "We believe our approach using multiplex editing of T-cells to produce allogeneic anti-CD5 CAR T investigational therapies may offer enhanced potency and more durable responses for patients with T-cell malignancies. Importantly, our base editing approach is designed to avoid making double-stranded breaks in DNA that are produced by multiplex editing with nucleases, thereby decreasing the potential for translocations and other genomic aberrations with potential for unforeseen consequences, increasing their potential safety and tolerability."

Key findings reported in the poster include:

- Multiplexed base editing resulted in anti-CD5 CAR T cells with 94-98% editing efficiency at all 5 target loci and transduction efficiency of over 85%, which Beam believes is an efficiency at which the likelihood of graft versus host disease, CAR T rejection, and immunosuppression would be greatly reduced;
- CD5 knockout improved production of a combination of proinflammatory cytokines, including a greater than 300% increase in IL-2 production;
- CD5 knockout greatly improved *in vivo* efficacy of anti-CD5 CAR T cells in a xenograft mouse model of T-ALL compared to unedited cells. CD5 edited anti-CD5 CAR T cells were able to clear established tumor in a dose dependent manner; however, unedited anti-CD5 CAR T cells failed to clear initial tumor at all doses despite demonstrating *in vitro* efficacy.
- Mice previously cleared of tumor underwent additional tumor challenges to assess the persistence and functionality of anti-CD5 CAR T cells and were cleared of tumor both a second and third time, indicating extended persistence of functional anti-CD5 CAR T cells *in vivo*.

About Beam Therapeutics
Beam Therapeutics (Nasdaq: BEAM) is a biotechnology company committed to establishing the leading, fully integrated platform for precision genetic medicines. To achieve this vision, Beam has assembled a platform that includes a suite of gene editing and delivery technologies and is in the process of building internal manufacturing capabilities. Beam's suite of gene editing technologies is anchored by base editing, a proprietary technology that enables precise, predictable and efficient single base changes, at targeted genomic sequences, without making double-stranded breaks in the DNA. This enables a wide range of potential therapeutic editing strategies that Beam is using to advance a diversified portfolio of base editing programs. Beam is a values-driven organization committed to its people, cutting-edge science, and a vision of providing life-long cures to patients suffering from serious diseases.

Cautionary Note Regarding Forward-Looking Statements
This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Investors are cautioned not to place undue reliance on these forward-looking statements, including, but not limited to, statements related to: our planned base editing data presentations at an upcoming scientific conference; the therapeutic applications and potential of our technology, including with respect to T-cell malignancies; and our ability to develop life-long, curative, precision genetic medicines for patients through base editing. Each forward-looking statement is subject to important risks and uncertainties that could cause actual results to differ materially from those expressed or implied in such statement, including, without limitation, risks and uncertainties related to: our ability to develop, obtain regulatory approval for, and commercialize our product candidates, which may take longer or cost more than planned; our ability to raise additional funding, which may not be available; our ability to obtain, maintain and enforce patent and other intellectual property protection for our product candidates; the potential impact of the COVID-19 pandemic; that preclinical testing of our product candidates and preliminary or interim data from preclinical studies and clinical trials may not be predictive of the results or success of ongoing or later clinical trials; that enrollment of our clinical trials may take longer than expected; that our product candidates may experience manufacturing or supply interruptions or failures; risks related to competitive products; and the other risks and uncertainties identified under the headings "Risk Factors Summary" and "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2020, our Quarterly Report on Form 10-Q for the quarter ended March 31, 2021, our Quarterly Report on Form 10-Q for the quarter ended June 30, 2021, our Quarterly Report on Form 10-Q for the quarter ended September 30, 2021, and in any subsequent filings with the Securities and Exchange Commission. These forward-looking statements speak only as of the date of this press release. Factors or events that could cause our

actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We undertake no obligation to update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by applicable law.

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