Beam Therapeutics Presents Additional Data for BEAM-302 in Alpha-1 Antitrypsin Deficiency (AATD) at 2025 Alpha-1 Foundation 7th Global Research Conference and 10th Patient Congress

April 5, 2025

New Data Demonstrate Proportion of Corrected M-AAT Reached a Mean of 91% of Total AAT in Circulation at Day 28 Following BEAM-302 Treatment in 60 mg Cohort (n=3)

Mean Decrease of 79% in Mutant Z-AAT Observed at Day 28 in 60 mg Cohort (n=3)

Fourth Cohort Evaluating 75 mg of BEAM-302 Initiated, with Updated Data from Part A of the Phase 1/2 Trial Expected to be Presented at a Medical Conference in Second Half of 2025

CAMBRIDGE, Mass., April 05, 2025 (GLOBE NEWSWIRE) -- Beam Therapeutics Inc. (Nasdaq: BEAM), a biotechnology company developing precision genetic medicines through base editing, today presented additional data from the Phase 1/2 clinical trial of BEAM-302 in patients with alpha-1 antitrypsin deficiency (AATD) at the 2025 Alpha-1 Foundation 7th Global Research Conference and 10th Patient Congress, taking place April 4-5, 2025, in Lisbon, Portugal.

Positive initial safety and efficacy data from the Phase 1/2 trial of BEAM-302 were previously reported in March 2025, establishing clinical proof of concept as a potential treatment for AATD and *in vivo* base editing. Preliminary results from the first three single-ascending dose cohorts demonstrated that BEAM-302 was well tolerated, with single doses of BEAM-302 leading to durable dose-dependent correction of the disease-causing mutation and total AAT protein levels above the therapeutic threshold in the 60 mg dose cohort.

These previously reported data were included in today's presentation, alongside updated biomarker data from the 60 mg cohort showing levels of corrected protein (M-AAT) and the mutant form of alpha-1 antitrypsin protein (Z-AAT) out to Day 28 for all three patients. At Day 28, the proportion of corrected M-AAT reached a mean of 91% of total AAT in circulation, surpassing levels observed in patients with the MZ genotype where circulating M-AAT is typically ~80%. In addition, treatment with BEAM-302 led to a mean decrease of 79% of circulating mutant Z-AAT from baseline as of Day 28.

"Patients living with AATD can face serious complications, including early onset emphysema and liver disease, and there is a significant unmet need for more effective therapies that can treat the entire spectrum of disease manifestations," said Amy Simon, M.D., chief medical officer of Beam. "The totality of the data shared to date highlight the promising impact of our approach across multiple drivers of disease pathology, including dose-dependent correction of the disease-causing mutation, rapid elevation in the circulation of total AAT and corrected M-AAT that is functional, and significant reduction in circulating mutant Z-AAT. We are honored to share these findings with the AATD community and look forward to continuing to advance our Phase 1/2 study to bring this potentially transformative treatment to patients as quickly as possible."

Beam plans to continue the dose-escalation portion of Part A of the ongoing Phase 1/2 trial, including enrolling and dosing a fourth dose cohort of 75 mg, and expects to report further data at a medical conference in the second half of 2025. In addition, the company plans to dose the first patient in Part B, which will include AATD patients with mild to moderate liver disease, in the second half of 2025. Beam recently announced the clearance of its investigational drug application (IND) for BEAM-302 by the United States (U.S.) Food and Drug Administration (FDA), enabling the company to activate sites in the U.S. for its ongoing Phase 1/2 trial.

About BEAM-302
BEAM-302 is a liver-targeting lipid-nanoparticle (LNP) formulation of base editing reagents designed to correct the PiZ mutation. Patients homozygous for this mutation (PiZZ) represent the majority of patients living with severe AATD disease. A one-time A-to-G correction of the PiZ mutation with Beam's adenine base editor has the potential to simultaneously reduce the aggregation of mutant, misfolded AAT protein that causes toxicity to the liver (Z-AAT), generate therapeutic levels of corrected protein (M-AAT), and increase total and functional AAT in circulation, thereby addressing the underlying pathophysiology of both the liver and lung disease. In addition, the reduction in circulating PiZ aggregates (i.e., polymers) has the potential to further minimize lung inflammation and dysfunction. Importantly, because the native AAT gene would be corrected in its normal genetic location, AAT levels are anticipated to increase physiologically in response to inflammation or infection. This is a critical aspect of AAT's normal function to regulate the body's inflammatory response, which does not occur with currently approved protein replacement therapies. Correction of the PiZ mutation is expected to be durable based on preclinical and clinical evidence.

About Alpha-1 Antitrypsin Deficiency (AATD)
AATD is an inherited genetic disorder that can cause early onset emphysema 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 the PiZ mutation or the "Z" allele). This point mutation causes alpha-1 antitrypsin, or AAT, to misfold, accumulating inside liver cells rather than being secreted, resulting in very low levels (10%-15%) of circulating AAT. In addition to resulting in lower levels, the PiZ AAT protein variant is also less enzymatically effective compared to wildtype AAT protein. 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 requiring patients to undergo a liver transplant.

It is estimated that approximately 100,000 individuals in the U.S. have two copies of the Z allele, known as the PiZZ genotype, although only about 10% of all patients are thought to have been diagnosed. There are currently no curative treatments approved for patients with AATD, and the only approved therapy in the U.S., intravenous AAT protein replacement, has not been shown to prevent ongoing lung function decline and destruction in patients.

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 with integrated gene editing, delivery and internal manufacturing capabilities. Beam's suite of gene editing technologies is anchored by base editing, a proprietary technology that is designed to enable precise, predictable and efficient single base changes, at targeted genomic sequences, without making double-stranded breaks in the DNA. This has the potential to enable a wide range of 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: the therapeutic applications and potential of our technology, including our potential to develop life-long, curative, precision genetic medicines for patients through base editing; our plans, and anticipated timing, to advance our BEAM-302 program; and the clinical trial designs and expectations for BEAM-302. 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 uncertainty that our product candidates will receive regulatory approval necessary to advance human clinical trials; 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 initiation and enrollment of, and anticipated timing to advance, our clinical trials may take longer than expected; that our product candidates or the delivery modalities we rely on to administer them may cause serious adverse events; 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, 2024, 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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