Beam Therapeutics Presents Data on Multiplex Base Editing for Engineered CAR-T Cells at American Society of Gene and Cell Therapy 22nd Annual Meeting

April 29, 2019

Cambridge, MASS., April 29, 2019 – Beam Therapeutics, a biotechnology company developing precision genetic medicines through base editing, today announced the presentation of preclinical data from the company's base editing platform at the American Society of Gene and Cell Therapy (ASGCT) 22nd Annual Meeting being held April 29 – May 2, 2019 in Washington, D.C.

In the experiment, the base editor BE4 demonstrated high efficiency multiplex base editing of three cell surface targets in primary human T cells (TRAC, B2M, and PD-1), knocking out expression of each gene in 95%, 95% and 88% of cells, respectively, in a single electroporation. Editing each of these genes may be useful in the creation of CAR-T cell therapies with improved therapeutic properties. Each of the genes was silenced by a single targeted base change (C to T) without the creation of double strand breaks. As a result, the BE4-treated cells also did not have any measurable translocations (large-scale genomic rearrangements), whereas cells receiving the same three edits with a nuclease did show detectable genomic rearrangements.

"Beam is actively applying base editing across a wide range of serious genetic diseases using both ex vivo and in vivo delivery approaches, and we are pleased to begin sharing some of the research progress in our therapeutic programs," said John Evans, chief executive officer of Beam. "The data presented today underscore one of the exciting emerging applications of base editing technology, which is to enable multiplex editing of CAR-T cells without genomic rearrangements. For advanced cellular therapies requiring a large number of simultaneous edits, base editing represents an important new technology that could open up new options for patients with cancer and other immune-mediated diseases."

Presentation Details:
Title: (#140) Base editors generate allogeneic CAR-T cells with no detectable genomic rearrangements and reduced genotoxicity
Session: CAR T Cell Therapies for Cancer
Date/time: Monday April 29, 2019, 4:00-4:15 p.m.
Room: IBR West

About Beam Therapeutics
Beam Therapeutics is developing precision genetic medicines through base editing, a next-generation gene editing technology. Founded by leading scientists in gene editing, Beam is pursuing therapies for serious diseases using its proprietary base editing technology, which can make precise edits to single bases (A, G, C, T) in DNA and RNA. Beam is headquartered in Cambridge, Mass. For additional information, visit www.BeamTx.com.

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