Editas Medicine Presents Preclinical Data on Novel Engineered iPSC-derived NK Cells for the Treatment of Cancer at the Society for Immunotherapy of Cancer 36th Annual Meeting

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CRISPR/Cas12a-mediated SLEEK knock-in of CD16 and IL-15 in iNK cells improved anti-tumor activity and NK cell persistence

CAMBRIDGE, Mass., Nov. 12, 2021 (GLOBE NEWSWIRE) -- Editas Medicine, Inc. (Nasdaq: EDIT), a leading genome editing company, today announced preclinical data on its progress in the development of novel engineered induced pluripotent stem cell (iPSC)-derived natural killer (NK) cells (or iNKs) for the treatment of cancer. In the presentation, the Company showed a new method to achieve high-levels of expression of CD16 and Interleukin-15 (IL-15) in iNK cells by using the Company's proprietary CRISPR/Cas12a-mediated SLEEK (SeLection by Essential-gene Exon Knock-in) technology to simultaneously knock-in both functional genes. The modifications resulted in improved serial tumor killing and dramatically increased NK cell persistence. The Company reported these findings in a poster presentation today at the Society for Immunotherapy of Cancer (SITC) 36th Annual Meeting being held in Washington, D.C., and virtually.

In these experiments, iPSCs were edited using the Company's SLEEK gene editing technology at the GAPDH locus with a proprietary, Editas-engineered AsCas12a nuclease to knock-in high-affinity CD16 and membrane bound IL-15. iPSC clones were then differentiated into iNKs that were confirmed to express high levels of CD16 and IL-15. Increasing NK cell CD16 expression can improve anti-tumor activity when combined with antibody-dependent cell-mediated cytotoxicity (ADCC)-enabling antibodies. IL-15 is important for NK cell survival, and increasing IL-15 expression prolongs the persistence of NK cells. Knock-in of IL-15 may also eliminate the need to administer cytokines systemically, which can cause severe toxicity.

Results demonstrated that the edited iNK cells exhibited enhanced serial tumor cell killing through ADCC in a2D assay against SKOV-3 ovarian cancer cells and in a 3D tumor spheroid killing assay. The edited iNK cells were also able to persist for a dramatically longer period of time relative to unedited iNK cells. Together, these data provide strong support for the continued development of engineered iPSC derived iNK cells as a potential novel class of therapeutics targeting solid tumors.

"In this promising new research, we demonstrate the use of our proprietary SLEEK technology to knock-in both CD16 and IL-15 into iNK cells. The engineered cells demonstrated potent anti-tumor activity and substantially increased persistence without systemic cytokines, an important limitation with many existing NK cell approaches. We also believe this to be a potentially safer and more reliable approach to developing next generation NK cell therapy medicines because through our iPSC development process, we only select cell clones that have exactly the desired on-target edits, thereby avoiding the possibility of cell abnormalities being introduced," said Mark S. Shearman, Ph.D., Executive Vice President and Chief Scientific Officer, Editas Medicine. "NK cells are great candidates for off-the-shelf immunotherapy medicines given their high tumor killing capacity and their low propensity for graft-versus-host disease, and we believe these data provide evidence for the potential of future experimental medicines from our iNK program to exert enhanced anti-tumor activity in the clinic in the treatment of solid tumors."

Full details of the Editas Medicine presentation can be accessed in the **Posters & Presentations** section on the Company's website.

About Editas Medicine
As a leading genome editing company, Editas Medicine is focused on translating the power and potential of the CRISPR/Cas9 and CRISPR/Cas12a (also known as Cpf1) genome editing systems into a robust pipeline of treatments for people living with serious diseases around the world. Editas Medicine aims to discover, develop, manufacture, and commercialize transformative, durable, precision genomic medicines for a broad class of diseases. For the latest information and scientific presentations, please visit www.editasmedicine.com.

Forward-Looking Statements
This press release contains forward-looking statements and information within the meaning of The Private Securities Litigation Reform Act of 1995. The words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "target," "should," "would," and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. The Company may not actually achieve the plans, intentions, or expectations disclosed in these forward-looking statements, and you should not place undue reliance on these forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in these forward-looking statements as a result of various factors, including: uncertainties inherent in the initiation and completion of preclinical studies and clinical trials and clinical development of the Company's product candidates; availability and timing of results from preclinical studies and clinical trials; whether interim results from a clinical trial will be predictive of the final results of the trial or the results of future trials; expectations for regulatory approvals to conduct trials or to market products and availability of funding sufficient for the Company's foreseeable and unforeseeable operating expenses and capital expenditure requirements. These and other risks are described in greater detail under the caption "Risk Factors" included in the Company's most recent Annual Report on Form 10-K, which is on file with the Securities and Exchange Commission, as updated by the Company's subsequent filings with the Securities and Exchange Commission, and in other filings that the Company may make with the Securities and Exchange Commission in the future. Any forward-looking statements contained in this press release speak only as of the date hereof, and the Company expressly disclaims any obligation to update any forward-looking statements, whether because of new information, future events or otherwise.

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