



Nkarta Announces Presentation of Preclinical Data on NKX019, Engineered NK Cell Therapy Candidate Targeting CD19, at the Annual Meeting of the Society for Immunotherapy of Cancer

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SOUTH SAN FRANCISCO, Calif., Nov. 09, 2020 (GLOBE NEWSWIRE) -- Nkarta, Inc. (Nasdaq: NKTX), a clinical-stage biopharmaceutical company developing engineered natural killer (NK) cell therapies to treat cancer, today announced a preclinical update on NKX019, its investigational allogeneic cancer immunotherapy that uses donor-derived natural killer (NK) cells engineered with a membrane-bound form of IL15 and a chimeric antigen receptor (CAR) targeting the CD19 antigen.

The data were presented today in a poster at the Society for Immunotherapy of Cancer (SITC) 35th Anniversary Annual Meeting entitled "Preclinical evaluation of NKX019, a CD19-targeting CAR NK Cell". Poster # 127.

Highlights of the preclinical findings include:

Cryopreserved NKX019 demonstrated potent, targeted anti-tumor activity in vitro and in vivo across different CD19-expressing cancer models for B cell lymphoma and acute lymphoblastic leukemia.

Compared to non-engineered NK cell controls, the dosing of NKX019 resulted in increased treatment exposure and superior anti-tumor activity.

Compared to T cells transduced to express a CD19 CAR, NKX019 demonstrated several advantages. NKX019 was more potent on a per cell basis than CD19 CAR T cells, with a more rapid onset of activity. Moreover, when exposed to tumor cells side-by-side with CAR19⁺ T cells, NKX019 produced significantly lower quantities of factors associated with cytokine release syndrome (CRS), a type of adverse event associated with approved CAR T cell therapies.

The preclinical data support the potency, safety and tolerability profile of NKX019. In addition to the limited cytokine response of NKX019 in the presence of tumor cells, NKX019 cell killing was highly specific, confined to CD19⁺ cells when tested in bulk peripheral blood.

James Trager, Ph.D., Nkarta's Chief Scientific Officer, noted, "Unprecedented outcomes have been seen in patients with B cell malignancies who received CD19-directed autologous CAR T cells. Despite the remarkable medical advance of these therapies, a significant need remains for treating these patients, and we've designed NKX019 with those needs in mind. The potential potency, safety and scalability of CD19-targeted NK cells create an opportunity to advance a new treatment paradigm. A recent publication by researchers at M.D. Anderson Cancer Center of a cohort of patients treated with a CD19 CAR-NK therapy achieved a complete remission in seven of 11 patients. We believe the anti-tumor activity and favorable cytokine profile demonstrated by our preclinical findings support the development of NKX019. We look forward to filing our IND for NKX019 in the first quarter of 2021."

About NKX019

NKX019 is an investigational, off-the-shelf cancer immunotherapy that uses natural killer (NK) cells derived from the peripheral blood of healthy donors and engineered with a chimeric antigen receptor (CAR) targeting the CD19 antigen and a membrane-bound form of IL15. CD19 antigen is a B cell marker and validated target for B cell cancer therapies. NKX019 uses the CAR to target and bind to CD19, leading to an immune response that eliminates CD19-expressing cells in preclinical studies. The addition of membrane-bound IL15, a proprietary version of a cytokine for activating NK cell growth, has been shown in pre-clinical models to enhance the proliferation, persistence and activity of NK cells. Nkarta plans to file an IND application with the FDA in the first quarter of 2021. A Phase 1 clinical trial of NKX019 in patients with advanced relapsed/refractory B cell malignancies is planned to initiate in 2021.

About Nkarta's NK Cell Technologies

Nkarta has pioneered a novel platform for the engineering and efficient production of allogeneic, off-the-shelf natural killer (NK) cell therapy candidates. The approach harnesses the innate ability of NK cells to recognize and kill tumor cells, and builds upon the important advances in cellular immunotherapy and chimeric antigen receptor (CAR) biology. To enhance the intrinsic activity of NK cells, Nkarta genetically engineers the cells with a CAR that consists of a targeting receptor designed to recognize and bind to specific proteins on the surface of cancerous cells. This receptor is fused to co-stimulatory and signaling domains to amplify cell signaling and NK cell cytotoxicity. Upon binding the target, NK cells can become activated and release cytokines that can enhance the immune response and cytotoxic granules that lead to killing of the target cell. All of Nkarta's NK cell therapy candidates are engineered with a membrane-bound IL15, a proprietary version of a cytokine known for activating NK cell growth, to enhance the persistence and activity of the NK cells.

Nkarta's manufacturing process generates an abundant supply of NK cells that, at commercial scale, is expected to be significantly lower in cost than other current allogeneic and autologous cell therapies. Key to this efficiency is the rapid expansion of donor-derived NK cells using a proprietary NKSTIM cell line, leading to the production of hundreds of individual doses from a single manufacturing run. The platform also features the ability to freeze and store CAR NK cells for an extended period of time and is designed to enable immediate, off-the-shelf administration to patients at the point of care.

About Nkarta

Nkarta is a clinical-stage biotechnology company advancing the development of allogeneic, off-the-shelf natural killer (NK) cell therapies for cancer. By combining its cell expansion and cryopreservation platform with proprietary cell engineering technologies, Nkarta is building a pipeline of cell therapy

candidates generated by efficient manufacturing processes, which are engineered to enhance tumor targeting and improve persistence for sustained activity in the body. For more information, please visit the company's website at www.nkartatx.com.

Cautionary Note on Forward-Looking Statements

Statements contained in this press release regarding matters that are not historical facts are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, as amended. Words such as "anticipates," "believes," "expects," "intends," "plans," "potential," "projects," "would" and "future" or similar expressions are intended to identify forward-looking statements. Examples of these forward-looking statements include statements concerning Nkarta's expectations regarding: the timing of Nkarta's NKX019 IND filing; the timing of initiation of the NKX019 Phase 1 clinical trial; NKX019's potential as a treatment for B cell malignancies; the activity and persistence of Nkarta's engineered NK cells, including NKX019; the potential potency, safety and scalability of CD19-targeted NK cells; the efficiency and cost of Nkarta's manufacturing processes; the number of doses generated from a manufacturing run; and the proprietary nature of Nkarta's technology. Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. These risks and uncertainties include, among others: Nkarta's limited operating history and historical losses; Nkarta's ability to raise additional funding to complete the development and any commercialization of its product candidates; Nkarta's dependence on the success of its co-lead product candidates, NKX101 and NKX019; that Nkarta may be delayed in initiating, enrolling or completing any clinical trials; competition from third parties that are developing products for similar uses; Nkarta's ability to obtain, maintain and protect its intellectual property; Nkarta's dependence on third parties in connection with manufacturing, clinical trials and pre-clinical studies; and risks relating to the impact on our business of the COVID-19 pandemic or similar public health crises.

These and other risks are described more fully in Nkarta's filings with the Securities and Exchange Commission ("SEC"), including the "Risk Factors" section of Nkarta's final prospectus for its initial public offering, filed with the SEC on July 13, 2020, Nkarta's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2020, filed with the SEC on August 20, 2020, and our other documents subsequently filed with or furnished to the SEC. All forward-looking statements contained in this press release speak only as of the date on which they were made. Except to the extent required by law, Nkarta undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made.

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