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Fate Therapeutics and Regents of the University of Minnesota Enter Into Research Collaboration for Translation of Natural Killer Cell Cancer Immunotherapies

"Adaptive" Natural Killer Cell Therapeutics to be Advanced as Antibody-Mediated Cancer Therapy

Genetically-Engineered Induced Pluripotent Stem Cell-derived Natural Killer Cells to be Developed as Off-the-Shelf Targeted Immunotherapy

Fate Therapeutics Holds an Exclusive Option to Secure All Patent Rights Arising from Collaboration

SAN DIEGO, July 14, 2015 (GLOBE NEWSWIRE) -- Fate Therapeutics, Inc. (NASDAQ:FATE) announced today that it has entered into a research collaboration with Regents of the University of Minnesota for the development of natural killer (NK) cell-based cancer immunotherapeutics. The collaboration will foster the advancement of two distinct therapeutic programs, both of which aim to leverage the inherent ability of NK cells to rapidly detect and effectively destroy malignant cells without prior antigen exposure or administration of a patient's own immune cells. While adoptive transfer of NK cells has demonstrated anti-tumor activity, the isolation and generation of clinically-relevant quantities of homogeneous populations of highly-persistent NK cells has been challenging. Fate Therapeutics will utilize its cell programming approach and proprietary induced pluripotent stem cell technology under the collaboration to pursue the development of optimized "off-the-shelf" NK cell-based cancer therapeutics.

"Cell-based immunotherapies are rapidly emerging as one of the most promising treatment paradigms for many oncology indications, and NK cell-based therapeutics in particular may offer a compelling off-the-shelf therapeutic approach to adoptive cancer immunotherapy," said Christian Weyer, M.D., M.A.S., President and Chief Executive Officer of Fate Therapeutics. "The University of Minnesota has pioneered the basic research and clinical investigation of NK cell-based therapeutics, and we look forward to collaborating with their expert team in the development of NK cell-based immunotherapies that may provide distinct advantages in transforming the treatment of cancer."

The antibody-dependent cellular cytotoxicity program will be led by renowned NK cell biologist Jeffrey S. Miller, M.D., Deputy Director of the Masonic Cancer Center and the Deputy Director of the Clinical and Translational Science Institute at the University of Minnesota. Dr. Miller and his team have recently identified an "adaptive" NK cell phenotype that exhibits a unique metabolic program shown in preclinical studies to promote long-term persistence *in vivo*, and that has an epigenetic profile similar to that of cytotoxic T lymphocytes, which may induce potent anti-tumor activity against a variety of tumors. Under the collaboration, Dr. Miller and Fate Therapeutics will apply the Company's cell programming approach with the intent to optimize NK cell persistence and cytotoxicity and accelerate the development of a programmed "adaptive" NK cellular therapeutic for use in combination with tumor-specific monoclonal antibodies.

"We are excited about the prospects of utilizing cell programming to optimize the anti-tumor properties of the phenotype, and look forward to collaborating with Fate Therapeutics in the development of programmed adaptive NK cell-based immunotherapeutics to treat cancer," said Dr. Miller. "Our data demonstrate that the adaptive phenotype is functionally distinct from conventional NK cells upon triggering through the CD16 receptor, which may make these cells ideal effectors to elicit an enhanced antibody-mediated cytotoxic effect."

The second program, focusing on induced pluripotent stem cell (iPSC)-derived targeted cancer immunotherapy, will be led by Dan Kaufman, M.D., Ph.D., Professor of Medicine and a member of the Masonic Cancer Center at the University of Minnesota. Dr. Kaufman has pioneered the derivation of NK cells from pluripotent stem cells (iNK cells), including the establishment of a clinically-compatible culture system and differentiation protocol that enable the efficient generation of large quantities of cytotoxic NK cells. Leveraging the Company's proprietary iPSC technology, Dr. Kaufman and Fate Therapeutics will genetically-modify iPSCs to express tumor cell-targeting modalities, creating an immune-engineered pluripotent cell source for use in the derivation of "off-the-shelf" NK cell-based targeted immunotherapies.

"The introduction of antigen-specificity by genetically engineering induced pluripotent stem cells, combined with the unlimited proliferative potential and differentiation capacity of such cells, may prove to be the cornerstone of off-the-shelf targeted cancer immunotherapy," said Dr. Kaufman. "We look forward to developing engineered iNK cell-based cancer therapeutics in collaboration with Fate Therapeutics that may overcome key limitations of adaptive autologous cell therapy including the requirement to isolate and engineer cells for each individual patient."

In consideration for funding the collaboration activities, Fate Therapeutics has the option to secure exclusive patent rights to all

intellectual property arising under the collaboration. Additionally, Fate Therapeutics has secured an exclusive option to certain background intellectual property of the University of Minnesota. Drs. Miller and Kaufman will serve as advisors to the Company in the development of hematopoietic cell-based immunotherapies, including those derived from induced pluripotent stem cells.

About Fate Therapeutics, Inc.

Fate Therapeutics is a clinical-stage biopharmaceutical company engaged in the development of programmed cellular therapeutics for the treatment of severe, life-threatening diseases. The Company's lead product candidate, PROHEMA®, is an *ex vivo* programmed hematopoietic cellular therapeutic, which is currently in clinical development in patients undergoing hematopoietic stem cell transplantation. The Company is also developing a PD-L1 programmed immuno-regulatory cellular therapeutic for the treatment of autoimmune diseases and is leveraging its proprietary induced pluripotent stem cell platform to develop natural killer cell and T cell cancer immunotherapeutics. Fate Therapeutics is headquartered in San Diego, CA. For more information, please visit www.fatetherapeutics.com.

Forward-Looking Statements

This release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including statements regarding the therapeutic potential of natural killer (NK) cell-based therapeutics, including those that are genetically engineered, or utilize an "adaptive" phenotype, or are derived from induced pluripotent stem cells (iPSCs), and any product candidates that may arise from the Company's collaboration with Regents of the University of Minnesota, the potential anti-tumor properties of NK cells and NK cell-based therapeutics, and the Company's plans to undertake certain preclinical research and development of NK cell-based therapeutics, including through the application of the Company's cell programming approach and its iPSC technology. These and any other forward-looking statements in this release are based on management's current expectations of future events and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those set forth in or implied by such forward-looking statements. These risks and uncertainties include, but are not limited to, the risk of cessation or delay of planned research and preclinical development activities for a variety of reasons, any inability to develop NK cell-based therapeutics, including those which have an "adaptive" phenotype, which are genetically engineered, or which are iPSC-derived, that are suitable for cancer immunotherapy, the risk that any NK cell-based therapeutic or other product candidate that the Company may develop under the collaboration may not produce therapeutic benefits or may cause other unanticipated adverse effects, and the risk that the Company's collaboration with Regents of the University of Minnesota may not be successful or may be terminated for a variety of reasons. For a discussion of other risks and uncertainties, and other important factors, any of which could cause the Company's actual results to differ from those contained in the forward-looking statements, see the risks and uncertainties detailed in the Company's periodic filings with the Securities and Exchange Commission, including but not limited to the Company's Form 10-Q for the quarter ended March 31, 2015, and from time to time the Company's other investor communications. The Company is providing the information in this release as of this date and does not undertake any obligation to update any forward-looking statements contained in this release as a result of new information, future events or otherwise.

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