Atossa Genetics Announces Chimeric Antigen Receptor Therapy (CAR-T) Program in Breast Cancer

SEATTLE, Oct. 02, 2017 (GLOBE NEWSWIRE) -- Atossa Genetics (NASDAQ:ATOS), a clinical-stage pharmaceutical company developing novel therapeutics and delivery methods for breast cancer and other breast conditions, announced today a new program using Chimeric Antigen Receptor Therapy, or CAR-T. Atossa plans to use its proprietary intraductal microcatheter technology to deliver CAR-T cells into the ducts of the breast for the potential targeted treatment of breast cancer.

Atossa’s novel approach uses its proprietary intraductal microcatheter technology for the potential transpapillary, or “TRAP,” delivery of T-cells that have been genetically modified to attack breast cancer cells. Atossa believes this method has several potential advantages: reduced toxicity by limiting systemic exposure of the T-cells; improved efficacy by placing the T-cells in direct contact with the target ductal epithelial cells that are undergoing malignant transformation; and, lymphatic migration of the CAR-T cells along the same path taken by migrating cancer cells, potentially extending their cytotoxic actions into the regional lymph system, which could limit tumor cell dissemination.

Atossa’s approach is in the research and development phase and has not been approved by the FDA or any other regulatory body. Pre-clinical studies, and clinical studies demonstrating safety and efficacy among other things, and regulatory approvals will be required before commercialization.

“We have been encouraged by the promise that CAR-T has shown in other forms of cancer, which is usually delivered systemically. We believe that our proprietary TRAP technology could provide a potentially safer yet effective method to deliver CAR-T,” stated Steven Quay, MD, PhD, Atossa CEO. “We believe that TRAP CAR-T, as we are calling this novel approach to adaptive T-cell therapy in breast cancer, will provide another approach to breast cancer, and that it may be particularly well-suited for the deadlier forms of breast cancer such as ‘triple negative.’ Now that we have developed a foundational intellectual property position with respect to TRAP CAR-T, we intend to continue research and development through partnership with leading investigators, institutions, and organizations around the world, bringing Atossa’s technology and expertise in TRAP delivery together with experts in cancer immunology and T-cell biology. Multiple studies in both animals and humans have shown that a number of therapeutics can be delivered by the TRAP, intraductal route,” Dr. Quay added.

About TRAP CAR-T

T cells are removed from a patient and modified so that they express receptors specific to the patient's particular breast cancer. The T cells, which can then recognize and kill the cancer cells, are reintroduced into the patient using a microcatheter into the natural ducts of the breast.

Chimeric antigen receptors (or, “CARs” and also known as chimeric immunoreceptors, chimeric T cell receptors, artificial T cell receptors or CAR-T) are engineered receptors, which graft an arbitrary specificity onto an immune effector cell (T cell). Typically, these receptors are used to graft the specificity of a monoclonal antibody onto a T cell, with transfer of their coding sequence facilitated by retroviral vectors. The receptors are called chimeric because they are composed of parts from different sources.

CAR-T technology has been the subject of much attention recently as pioneer CAR-T company Kite Pharma recently announced its acquisition by Gilead, and the FDA has recently approved Novartis’s Kymriah™ for treatment of B-cell Acute Lymphoblastic Leukemia.

**About Atossa Genetics**

Atossa Genetics Inc., is a clinical-stage pharmaceutical company developing novel therapeutics and delivery methods to treat breast cancer and other breast conditions. For more information, please visit www.atossagenetics.com.

**Forward-Looking Statements**

Forward-looking statements in this press release, which Atossa undertakes no obligation to update, are subject to risks and uncertainties that may cause actual results to differ materially from the anticipated or estimated future results, including the risks and uncertainties associated with actions and inactions by the FDA, the outcome or timing of regulatory approvals needed by Atossa, lower than anticipated rate of patient enrollment, results of clinical studies, the safety and efficacy of Atossa's products and services, performance of clinical research organizations and investigators, obstacles resulting from proprietary rights held by others, such as patent rights, and other risks detailed from time to time in Atossa's filings with the Securities and Exchange Commission, including without limitation its periodic reports on Form 10-K and 10-Q, each as amended and supplemented from time to time.

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Source: Atossa Genetics, Inc.