



Atara Biotherapeutics Presents Off-the-Shelf, Allogeneic CAR T Preclinical Results at the American Association of Cancer Research (AACR) Annual Meeting 2019

April 1, 2019

Epstein-Barr virus-specific T cells were engineered to express second-generation CD19 chimeric antigen receptors, eliminated *in vitro* alloreactivity and inhibited tumor growth in an animal model

Off-the-shelf, allogeneic CAR T immunotherapy platform development to advance using next-generation CD19 CAR co-stimulatory domains and intrinsic checkpoint inhibition technologies

Based on positive collaborator Phase 1 clinical results also presented at AACR 2019, Atara plans to progress a next-generation, mesothelin-targeted CAR T immunotherapy leveraging Memorial Sloan Kettering Cancer Center technologies designed to further enhance responses in patients with mesothelioma and other advanced solid tumors

SOUTH SAN FRANCISCO, Calif., April 01, 2019 (GLOBE NEWSWIRE) -- Atara Biotherapeutics, Inc. (Nasdaq: ATRA), a leading off-the-shelf, allogeneic T-cell immunotherapy company developing novel treatments for patients with cancer, autoimmune and viral diseases, today presented off-the-shelf, allogeneic CAR T platform preclinical proof-of-concept results at the American Association of Cancer Research (AACR) Annual Meeting 2019 in Atlanta, Georgia.

"Atara is building a leading next-generation CAR T pipeline," said Christopher Haqq, M.D., Ph.D., Executive Vice President and Chief Scientific Officer of Atara Biotherapeutics. "Preclinical results presented today demonstrate that our EBV-specific T cell platform has the potential to be efficiently engineered to generate off-the-shelf, allogeneic CAR T immunotherapies with favorable characteristics. We look forward to advancing this technology using novel co-stimulatory domains and intrinsic checkpoint inhibition, leveraging Atara's research expertise and world-class T cell manufacturing capabilities."

Atara engineered EBV-specific T cells to express second-generation CD19 CARs (EBV.CD19.CAR T), utilizing CD28 or 4-1BB co-stimulatory domains, resulting in high expression of both the CD19 CAR and EBV T cell receptor (TCR). EBV.CD19.CAR T cells exerted potent and specific cytotoxicity against CD19 or EBV-positive cells and had limited activity against CD19-negative cells, while also depleting alloreactive activity. EBV.CD19.CAR T cells also demonstrated a central memory phenotype that balances expansion with effector function and is associated with persistence.

"EBV.CD19.CAR T cells exhibited optimal CAR T characteristics and *in vivo* function," said Blake T. Aftab, Ph.D., Vice President, Head of Preclinical and Translational Science for Atara Biotherapeutics. "These data also demonstrate that Atara's off-the-shelf, allogeneic CAR T process effectively eliminated *in vitro* alloreactivity. Our findings establish feasibility for combining EBV-specific T cells with novel CAR technologies and support our further development of next-generation off-the-shelf, allogeneic CAR T clinical candidates."

EBV.CD19.CAR T anti-tumor activity was evaluated *in vivo* in a mouse model of aggressive lymphoma. Following a period of tumor establishment, a single injection of EBV.CD19.CAR T cells significantly inhibited tumor growth.

Additionally, yesterday at the AACR Annual Meeting 2019, Atara's collaborators at Memorial Sloan Kettering Cancer Center (MSK), Prasad S. Adusumilli, M.D., and Michel Sadelain, M.D., Ph.D., presented Phase 1 clinical results for a mesothelin-target CAR T immunotherapy that included safety data, anti-tumor responses, and combination data with a PD-1 checkpoint inhibitor. The results further support Atara's planned development of a next-generation, mesothelin-targeted CAR T immunotherapy using MSK's novel 1XX CAR signaling domain and PD-1 dominant negative receptor (DNR) checkpoint inhibition technologies for patients with mesothelin-associated solid tumors.

Abstract 2310: Functional demonstration of CD19 chimeric antigen receptor (CAR) engineered Epstein-Barr virus (EBV) specific T cells: An off-the-shelf, allogeneic CAR T-cell immunotherapy platform

Session Category: Immunology

Session Title: Adoptive Cell Therapy 2

Poster Presentation Date and Time: Monday, April 1, 2019, from 1:00 p.m. - 5:00 p.m. EDT

Location: Georgia World Congress Center, Exhibit Hall B

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About Atara Biotherapeutics, Inc.

[Atara Biotherapeutics, Inc. \(@Atarabio\)](#) is a leading off-the-shelf, allogeneic T-cell immunotherapy company developing novel treatments for patients with cancer, autoimmune and viral diseases. Atara's technology platform leverages research collaborations with leading academic institutions with the Company's scientific, clinical, regulatory and manufacturing expertise. Atara's pipeline includes tab-cel[®] (tabelecleucel), which is in Phase 3 development for patients with Epstein-Barr virus-associated post-transplant lymphoproliferative disorder (EBV+ PTLD) as well as other EBV-associated hematologic malignancies and solid tumors, including nasopharyngeal carcinoma (NPC); T-cell immunotherapies targeting EBV antigens believed to be important for the potential treatment of multiple sclerosis; and next-generation chimeric antigen receptor T-cell (CAR T) immunotherapies for cancer as well as targets in other therapeutic areas. The company was founded in 2012 and is co-located in South San Francisco and Southern California. Our Southern California hub is anchored by the state-of-the-art Atara T-Cell Operations and Manufacturing (ATOM) facility in Thousand Oaks, California.

Forward-Looking Statements

This press release contains or may imply "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. For example, forward-looking statements include statements regarding: Atara's ability to engineer its EBV-specific T cell platform to generate off-the-shelf, allogeneic CAR T immunotherapies with favorable characteristics and to advance this technology; whether Atara's T Cells exhibited optimal CAR T characteristics and in vivo function; and Atara's ability to develop next-generation off-the-shelf, allogeneic CAR T clinical candidates, including one that targets mesothelin. Because such statements deal with future events and are based on Atara Biotherapeutics' current expectations, they are subject to various risks and uncertainties and actual results, performance or achievements of Atara Biotherapeutics could differ materially from those described in or implied by the statements in this press release. These forward-looking statements are subject to risks and uncertainties, including those discussed in Atara Biotherapeutics' filings with the Securities and Exchange Commission (SEC), including in the "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" sections of the Company's most recently filed periodic reports on Form 10-K and Form 10-Q and subsequent filings and in the documents incorporated by reference therein. Except as otherwise required by law, Atara Biotherapeutics disclaims any intention or obligation to update or revise any forward-looking statements, which speak only as of the date hereof, whether as a result of new information, future events or circumstances or otherwise.

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