February 27, 2019

Atara Biotherapeutics Announces Presentations Highlighting Next-Generation CAR T Platform and Mesothelin-Targeted CAR T Clinical Results at American Association of Cancer Research (AACR) Annual Meeting 2019

Atara to present off-the-shelf, allogeneic CAR T proof-of-concept results demonstrating Epstein-Barr virus (EBV)-specific T cells expressing chimeric antigen receptors

Memorial Sloan Kettering collaborators to present Phase 1 clinical safety and efficacy results of malignant pleural disease patients treated with regionally delivered autologous mesothelin-targeted CAR T

SOUTH SAN FRANCISCO, Calif., Feb. 27, 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 announced presentations highlighting next-generation CAR T platform and mesothelin-targeted CAR T clinical safety and efficacy results from Memorial Sloan Kettering Cancer Center (MSK) at the American Association of Cancer Research (AACR) Annual Meeting 2019. The event will be held March 29 to April 3 in Atlanta, Georgia.

“Atara has established a leading next-generation CAR T portfolio,” said Dietmar Berger, M.D., Ph.D., Global Head of Research and Development of Atara Biotherapeutics. “Encouraging pre-clinical results at AACR show the potential of our EBV-specific T cell platform to generate off-the-shelf, allogeneic CAR T immunotherapies. We also look forward to our MSK collaborators’ clinical results of a mesothelin-targeted autologous CAR T for patients with advanced malignant pleural disease.”

Mesothelin is a solid tumor-associated antigen that is expressed at high levels on the surface of cells in aggressive solid tumors including mesothelioma, triple-negative breast cancer, ovarian cancer, pancreatic cancer and non-small cell lung cancer. Initial results from an ongoing MSK investigator-sponsored Phase 1 study (NCT02414269) of a mesothelin-targeted CAR T immunotherapy for patients with malignant pleural cancers were presented at the 2018 American Society of Gene and Cell Therapy (ASGCT) Annual Meeting and support activity and safety in patients with advanced mesothelioma[1,2]. This ongoing Phase 1 dose-escalation study continues to accrue patients and the initial results at ASGCT 2018 showed enhanced response rates when patients were subsequently treated with pembrolizumab, a PD-1 checkpoint inhibitor. MSK is also investigating mesothelin-targeted CAR T cells for patients with advanced breast and lung cancer (NCT02792114).

In January 2019, Atara announced an exclusive license and collaboration agreement with MSK to develop a next-generation, mesothelin-targeted CAR T using 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 pm - 5:00 pm EDT
Location: Georgia World Congress Center, Exhibit Hall B
Authors: Blake T. Aftab, Rhine R. Shen, Christina D. Pham, Michelle Wu, Daniel J. Munson
Affiliations: Atara Biotherapeutics
Summary: Atara engineered EBV-specific T cells to express second-generation CD19 CARs, utilizing CD28 or 4-1BB co-stimulatory domains, resulting in high expression of both CD19 CAR and EBV T cell receptor (TCR). The chimeric EBV.CD19.CAR T cells exert potent and specific cytotoxicity against CD19-positive cells but have limited activity against CD19-negative cells. These findings establish feasibility for engineering EBV-specific T cells by leveraging next-generation CAR technologies, and support further development as an off-the-shelf, allogeneic CAR T immunotherapy platform.

Title: A Phase I clinical trial of malignant pleural disease treated with regionally delivered autologous mesothelin-targeted CAR T cells: Safety and efficacy
Session: Advances in Novel Immunotherapeutics
Clinical Trials Minisymposium Date and Time: Sunday, March 31, 2019 from 3:00 pm - 5:00 pm EDT
Location: Room A411 - Georgia World CC
Authors: Prasad S. Adusumilli, Marjorie Zauderer, Valerie Rusch, Roisin O'Cearbhaill, Amy Zhu, Daniel Ngai, Erin McGee, Navin Chintala, John Messinger, Alain Vincent, Elizabeth Halton, Claudia Diamonte, John Pineda, Shanu Modi, Steve Solomon, David R Jones, Renier Brentjens, Isabelle Riviere, Michel Sadelain
Affiliations: Memorial Sloan Kettering Cancer Center

References

[1]Adusumilli PS, *et al.* A phase I clinical trial of malignant pleural disease treated with regionally delivered autologous mesothelin-targeted CART cells: safety and efficacy - a preliminary report. Abstract 342; 2018 ASGCT Annual Meeting; Chicago, IL; May 16-19, 2018.
[2]Adusumilli PS, *et al.* Regional delivery of mesothelin-targeted CAR T cell therapy generates potent and long-lasting CD4-dependent tumor immunity. *Sci Transl Med.* 2014 Nov 5;6(261):261ra151. doi: 10.1126/scitranslmed.3010162.

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: pre-clinical programs and results, the potential of Atara's T cell platform to generate an off the shelf, allogeneic CAR T targeting mesothelin or other targets and the effectiveness of targeting mesothelin to treat solid tumors. 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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