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Atara Biotherapeutics Presents New Preclinical Data on ATA3271, a Next-Generation Allogeneic Mesothelin-Targeted CAR T to Treat Solid Tumors, at the 35th Society for Immunotherapy of Cancer Annual Meeting (SITC 2020)

Atara's allogeneic CAR T therapy leverages the combination of cell intrinsic PD1DNR checkpoint inhibition and 1XX CAR signaling technologies built on the Company's novel EBV T-cell platform

Preclinical findings demonstrate potent antitumor activity, persistence and low toxicity profile of ATA3271, supporting further clinical investigation

SOUTH SAN FRANCISCO, Calif.--(BUSINESS WIRE)-- Atara Biotherapeutics, Inc. (Nasdaq: ATRA), a pioneer in T-cell immunotherapy, leveraging its novel allogeneic EBV T-cell platform to develop transformative therapies for patients with serious diseases including solid tumors, hematologic cancers and autoimmune disease, today announced the presentation of the first preclinical evaluation of ATA3271, a next-generation, off-the-shelf, allogeneic EBV CAR T-cell therapy targeting mesothelin designed for the treatment of solid tumors. These data are being featured in a poster presentation at the 35th Society for Immunotherapy of Cancer Annual Meeting (SITC 2020), November 11-14, 2020.

"We have made meaningful progress advancing IND-enabling studies for ATA3271, an allogeneic mesothelin CAR T, which leverages our differentiated EBV T-cell platform and utilizes the PD1DNR and 1XX technologies to improve efficacy, persistence, and durability of response. Such innovative CAR T design addresses key hurdles for realizing the potential for CAR T therapies in solid tumor settings," said Jakob Dupont, Global Head of Research and Development at Atara. "Mesothelin, an antigen associated with aggressive solid tumors, is a promising target for tumor-specific therapy and combined with our EBV T-cell platform and the PD1DNR and 1XX technologies has led to the potent preclinical antitumor activity of ATA3271 that functionally persists after multiple tumor cell challenges."

Results presented at SITC detail findings from *in vitro* and *in vivo* evaluation of ATA3271. Specifically, *in vitro* functional studies show potent antitumor activity of ATA3271 against mesothelin-expressing cell lines, with potency maintained in the presence of high tumor PD-L1 expression. These data support the design of ATA3271, which expresses a dominant negative version of PD-1 receptor, to maintain function in the presence of suppressive checkpoint ligands commonly associated with solid tumor microenvironments. In addition, results further support the combined functional design of ATA3271's 1XX costimulatory domain technology in maintaining memory phenotype while limiting cell exhaustion in the

context of repeated tumor cell challenges.

Furthermore, ATA3271 retains reduced allocytotoxic function against HLA mismatched targets, a characteristic that is associated with Atara's allogeneic EBV T-cell platform that leverages enrichment of endogenous EBV-TCR function to decrease clinical risks for GvHD. We also believe that our allogeneic EBV CAR T-cell platform may prevent cellular exhaustion and augment *in vivo* expansion.

In vivo, ATA3271 exhibited potent antitumor activity and significant survival benefit in mice implanted with MGM-PDL1 cells that highly express both mesothelin as well as PD-L1. This *in vivo* potency was demonstrated without evident toxicities. All mice treated with ATA3271 (n=10) survived through the study duration, while control mice (n=10) all died within a median duration of 25 days (15- to 35-day survival range), post tumor implantation. Evidence in six of ten mice also showed that ATA3271 persisted *in vivo* by day 51. *Ex vivo* analysis of a subset of these persistent cell populations (n=4) demonstrated maintenance of phenotypic memory markers over the duration of the *in vivo* activity.

Mesothelin is a tumor-specific antigen that is commonly expressed at high levels on the cell surface in many aggressive solid tumors including mesothelioma, triple-negative breast cancer, esophageal cancer, ovarian cancer, pancreatic cancer and non-small cell lung cancer and is an attractive target for immune-based therapies. Both *in vitro* and *in vivo* results for ATA3271 suggest that allogeneic mesothelin-CAR-engineered EBV T cells are a promising approach for the treatment of mesothelin-positive cancers.

"The results presented today further support the continued development of our allogeneic mesothelin-targeted next-generation CAR T program," said AJ Joshi, M.D., Senior Vice President and Chief Medical Officer at Atara. "We look forward to building upon these foundational preclinical studies to advance ATA3271 in the clinic with the goal of bringing a potentially transformative therapeutic option to treat aggressive solid tumors including mesothelioma."

Atara's next generation CAR T immunotherapy franchise for mesothelin also includes autologous ATA2271. The U.S. Food and Drug Administration (FDA) recently accepted an Investigational New Drug (IND) application to initiate a Phase 1 clinical study of ATA2271 for the treatment of advanced mesothelioma.

About Atara Biotherapeutics, Inc.

Atara Biotherapeutics, Inc. (@Atarabio) is a pioneer in T-cell immunotherapy leveraging its novel allogeneic EBV T-cell platform to develop transformative therapies for patients with serious diseases including solid tumors, hematologic cancers and autoimmune disease. With our lead program in Phase 3 clinical development, Atara is the most advanced allogeneic T-cell immunotherapy company and intends to rapidly deliver off-the-shelf treatments to patients with high unmet medical need. Our platform leverages the unique biology of EBV T cells and has the capability to treat a wide range of EBV-associated diseases, or other serious diseases through incorporation of engineered CARs (chimeric antigen receptors) or TCRs (T-cell receptors). Atara is applying this one platform to create a robust pipeline including: tab-cel® (tabelecleucel) in Phase 3 development for Epstein-Barr virus-driven post-transplant lymphoproliferative disease (EBV+ PTLD); ATA188, a T-cell immunotherapy targeting EBV antigens as a potential treatment for multiple sclerosis; and

multiple next-generation chimeric antigen receptor T-cell (CAR-T) immunotherapies for both solid tumors and hematologic malignancies. Improving patients' lives is our mission and we will never stop working to bring transformative therapies to those in need. Atara is headquartered in South San Francisco and our leading-edge research, development and manufacturing facility is based in Thousand Oaks, California. For additional information about the company, please visit atarabio.com and follow us on Twitter and LinkedIn.

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: preclinical results and data from the IND-enabling studies for ATA3271; the timing and progress of ATA3271 and ATA2271, and Atara's ability to successfully advance the development of its CAR T programs. 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, without limitation, risks and uncertainties associated with the costly and time-consuming pharmaceutical product development process and the uncertainty of clinical success; the COVID-19 pandemic, which may significantly impact (i) our business, research, clinical development plans and operations, including our operations in South San Francisco and Southern California and at our clinical trial sites, as well as the business or operations of our third-party manufacturer, contract research organizations or other third parties with whom we conduct business, (ii) our ability to access capital, and (iii) the value of our common stock; the sufficiency of Atara's cash resources and need for additional capital; and other risks and uncertainties affecting Atara's and its development programs, 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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