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Adaptimmune Announces Data from Clinical Studies of NY-ESO-1 SPEAR™ T-Cells in Multiple Cancers at the 2016 Annual American Society of Clinical Oncology (ASCO) Meeting

PHILADELPHIA and OXFORD, United Kingdom, June 05, 2016 (GLOBE NEWSWIRE) -- Adaptimmune Therapeutics plc (Nasdaq:ADAP), a leader in T-cell therapy to treat cancer, today announced a poster presentation of updated data on its lead clinical program, an affinity enhanced SPEAR™ T-cell receptor therapy targeting the NY-ESO-1 cancer antigen, in patients with advanced tumors at the 2016 Annual American Society of Clinical Oncology (ASCO) Meeting.

Also being presented are an overview of cytokine release syndrome (CRS) in patients treated with NY-ESO SPEAR T-cells, and preclinical safety assessment of Adaptimmune's next SPEAR T-cell therapy product directed at alpha fetoprotein (AFP); enrollment in a clinical trial of this AFP SPEAR T-cell therapy is expected to initiate later this year.

"Our goal is to develop our broad pipeline of targets and affinity enhanced SPEAR T-cells in an effort to develop a panel of TCR T-cell therapies to offer patients suffering from a wide variety of cancers the hope of a cure," said Dr. Rafael Amado, Adaptimmune's Chief Medical Officer. "To that end, the clinical data described to date help clarify that our technology can be used to develop SPEAR T-cells against cancer targets that are capable of generating strong responses in the context of an acceptable benefit:risk profile. Further, we have developed and are utilizing a proprietary target validation and in vitro preclinical safety package that we believe can generate affinity enhanced TCRs against many cancers with reduced risk of safety events."

In the poster presentation entitled, "Genetically Engineered NY-ESO-1 Specific T-Cells in HLA-A:0201 positive Patients with Advanced Tumors," Crystal Mackall, M.D., Professor of Pediatrics and Medicine; Associate Director of the Stanford Cancer Institute, provided an update to the clinical experience of the NY-ESO SPEAR T-cell therapeutic in patients across cancer indications. The authors of the poster concluded:

- NY-ESO SPEAR T-cells demonstrated robust clinical responses in solid and hematologic tumors, including a 50 percent (6/12) response rate in synovial sarcoma, and a 91 percent (20/22) response rate in multiple myeloma at day 100;
- Preliminary data show responses to NY-ESO SPEAR T-cells in patients with low level of NY-ESO expression;
- To date, no objective clinical responses have been reported in the initial patients enrolled in the ovarian cancer and melanoma cohorts. These melanoma and ovarian cancer patients were enrolled using different screening assays from those included in

the synovial sarcoma and multiple myeloma studies, and did not include fludarabine in the preconditioning regimes. All patients in the melanoma study had failed prior checkpoint inhibitor therapy. Both trials will continue to enroll patients using revised protocols with standardized NY-ESO screening and using optimized conditioning regimens. In addition, a new melanoma study protocol is being designed to incorporate standard checkpoint inhibitor therapy in combination with NY-ESO SPEAR T-cells;

- NY-ESO SPEAR T-cells have been generally well tolerated with an acceptable benefit:risk profile in patients to date. The most common adverse events include rash, diarrhea, pyrexia, and fatigue. Grade 3/4 cytokine release syndrome was observed in four patients, which can be monitored and managed with supportive care measures;
- NY-ESO SPEAR T-cells exhibited durable persistence without the requirement for IL-2 support in vivo, with cells detectable for up to three years. Additionally, NY-ESO-T cytotoxic function was detected over time without accumulation of multiple exhaustion markers. Poor persistence appears to correlate with a lack of clinical response and pre-conditioning with Cytoxan alone in the ovarian and melanoma studies.

In the poster presentation entitled, “Cytokine Release Syndrome (CRS) in patients treated with NY-ESO-1^{c259} SPEAR T cells,” Crystal Mackall, M.D. presented a review of CRS including evaluation of concurrent AEs and reported symptoms, cytokine levels and CRP in patients treated with NY-ESO SPEAR T-cells:

- Of 53 patients treated with NY-ESO SPEAR T-cells as of January 27, 2016, eight were diagnosed with CRS: One patient was diagnosed with Grade 1, three patients with Grade 2, three patients with Grade 3 and one patient with Grade 4;
- Symptoms generally manifest in the first two weeks and have been effectively managed with supportive care measures. In these patients the onset of CRS coincided with T-cell expansion, and elevated IL-6 and IL-8 were observed during CRS;
- According to the authors, while there are differences in the patient populations, the incidence of CRS with NY-ESO SPEAR T-cell therapy appears to be of lower frequency and severity than reported with CD19 CAR-T therapy.

In the poster presentation entitled, “Targeting alpha fetoprotein with SPEAR T-cells in hepatocellular carcinoma,” Andrew Gerry, Ph.D., Adaptimmune’s Director of Preclinical Research, presented data describing the selection and screening of a SPEAR T-cell candidate targeting AFP:

- Adaptimmune’s extensive preclinical safety package comprised of molecular mapping, human cell testing, and potency testing is capable of validating TCRs with enhanced affinity for target proteins, but without marked recognition of non-cancerous tissue or safety concerns that would preclude clinical development;
- Target validation results indicated that AFP could be a very attractive target for HCC, with a potential therapeutic window for the TCR to recognize highly positive hepatocellular cancer tissue without marked recognition of non-cancerous tissue;
- No safety concerns were identified for AFP SPEAR T-cell reactivity, and no off-target AFP T-cell responses of concern were observed against a variety of cell types from a variety of organ systems. Alloreactivity was detected in a subset of HLA subtypes, which will be included in the exclusion criteria of the clinical study.

Adaptimmune’s SPEAR T-cell candidates are novel cancer immunotherapies that have been

engineered to target and destroy cancer cells by strengthening a patient's natural T-cell response. T-cells are a type of white blood cell that play a central role in a person's immune response. Adaptimmune's goal is to harness the power of the T-cell and, through its multiple therapeutic candidate, significantly impact cancer treatment and clinical outcomes of patients with solid and hematologic cancers.

About Adaptimmune

Adaptimmune is a clinical stage biopharmaceutical company focused on novel cancer immunotherapy products based on its SPEAR™ (Specific Peptide Enhanced Affinity Receptor) T-cell platform. Established in 2008, the company aims to utilize the body's own machinery - the T-cell - to target and destroy cancer cells by using engineered, increased affinity TCRs as a means of strengthening natural patient T-cell responses. Adaptimmune's lead program is a SPEAR T-cell therapy targeting the NY-ESO cancer antigen. Its NY-ESO SPEAR T-cell therapy has demonstrated signs of efficacy and tolerability in Phase 1/2 trials in solid tumors and in hematologic cancer types, including synovial sarcoma and multiple myeloma. Adaptimmune has a strategic collaboration and licensing agreement with GlaxoSmithKline for the development and commercialization of the NY-ESO TCR program. In addition, Adaptimmune has a number of proprietary programs. The company has identified over 30 intracellular target peptides preferentially expressed in cancer cells and is currently progressing 12 through unpartnered research programs. Adaptimmune has over 200 employees and is located in Oxfordshire, U.K. and Philadelphia, USA. For more information: <http://www.adaptimmune.com>

Forward-Looking Statements

This release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 (PSLRA). These forward-looking statements involve certain risks and uncertainties. Such risks and uncertainties could cause our actual results to differ materially from those indicated by such forward-looking statements, and include, without limitation: the success, cost and timing of our product development activities and clinical trials and our ability to successfully advance our TCR therapeutic candidates through the regulatory and commercialization processes. For a further description of the risks and uncertainties that could cause our actual results to differ materially from those expressed in these forward-looking statements, as well as risks relating to our business in general, we refer you to our Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission (SEC) on May 12, 2016, and our other SEC filings. The forward-looking statements contained in this press release speak only as of the date the statements were made and we do not undertake any obligation to update such forward-looking statements to reflect subsequent events or circumstances.

Adaptimmune Contacts

Will Roberts
Vice President, Investor Relations
T: (215) 825-9306
E: will.roberts@adaptimmune.com

Margaret Henry
Head of PR
T: +44 (0)1235 430036
Mobile: +44 (0)7710 304249
E: margaret.henry@adaptimmune.com



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