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Adaptimmune Announces Data From Clinical Study of NY-ESO Affinity Enhanced T-Cell Therapy in Synovial Sarcoma at the 2015 Annual Meeting of the Society of Immunotherapy for Cancer (SITC)

PHILADELPHIA and OXFORD, UK, Nov. 05, 2015 (GLOBE NEWSWIRE) -- Adaptimmune Therapeutics plc (Nasdaq:ADAP), a leader in the use of TCR engineered T-cell therapy to treat cancer, today presents updated data on its lead clinical program, an affinity enhanced T-cell receptor therapy targeting the NY-ESO-1 cancer antigen in synovial sarcoma, at the 2015 Annual Meeting of the Society of Immunotherapy for Cancer (SITC).

Also being presented are an extended follow-up and correlative data from Adaptimmune's study of its T-cell therapy targeting NY-ESO in patients with multiple myeloma, and preclinical safety assessments of its next affinity enhanced T-cell therapy product directed at MAGE A-10, for which a clinical trial is expected to initiate later this year.

The data presented demonstrate the following:

- In the primary efficacy analysis, 50 percent of synovial sarcoma patients receiving Adaptimmune's affinity enhanced T-cell therapy targeting NY-ESO responded, and 75 percent remain alive and on long term-follow up. Sixty (60) percent of patients receiving the target dose responded, and 90 percent remain alive and on long term-follow up;
- Adaptimmune's affinity enhanced T-cell therapy targeting NY-ESO in multiple myeloma generated responses that were better than expected for autologous stem cell transplant (ASCT) alone, despite the patients having advanced stage disease with 60 percent of patients having tumor chromosomal abnormalities; and
- Adaptimmune's platform technology enables the generation of multiple TCRs to a large number of cancer targets. Once affinity engineered, these TCRs are subjected to an extensive preclinical safety and efficacy package.

In the synovial sarcoma poster presentation, entitled: "Optimizing engineered TCR T-cell therapy for synovial sarcoma," Sandra P. D'Angelo, M.D., Assistant Attending, Sarcoma Medical Oncology / Immunotherapeutics Core at Memorial Sloan-Kettering Cancer Center is providing an update on Adaptimmune's NY-ESO-1 synovial sarcoma study, including all patients in the original cohort (*n*=12), and longer follow-up and time-to-event, as well as updated correlative and safety data, and characterization of the product pre- and post-infusion. All patients enrolled in the study had metastatic or relapse inoperable synovial sarcoma, and failed prior ifosfamide and/or doxorubicin therapy. The authors of the poster

conclude:

- Adaptimmune's affinity enhanced T-cell therapy targeting NY-ESO demonstrated robust clinical responses in synovial sarcoma, including a 50 percent (6/12) overall response rate (ORR) in patients receiving T-cells, and a 60 percent (6/10) response rate in a subset of patients who received the target dose of one to six billion total engineered T-cells. Two patients received below the target dose, and neither responded. This compares favorably to a historical partial response rate of approximately four percent observed with pazopanib, which is the only approved drug in this patient population.
- Seventy-five (75) percent (9/12) of all subjects who received any dose of NY-ESO-1 T cells - and 90 percent (9/10) of subjects who received the minimum intended cell dose - are alive and on long term follow-up. Forty-two (42) percent (5/12) of patients who received any dose have survival data beyond one year.
- NY-ESO-1 T-cells durably persist and maintain function without accumulation of exhaustion markers; persistence detected at up to 21 months in those receiving the minimum intended cell dose. Poor persistence was observed in subjects receiving less than 1 billion NY-ESO-1 T-cells, with no detectable cells beyond day 25.
- The encouraging anti-tumor activity considered in the context of a generally manageable safety profile is supportive of a favorable benefit:risk for NY-ESO-1 T-cells in this patient population. Most treatment related adverse events resolve within 30 days of treatment. The most common adverse events include: nausea, anemia, pyrexia, lymphopenia, and neutropenia. There were no treatment related deaths. Cytokine release syndrome was seen in 4 subjects; Grade 3 cytokine release syndrome was observed in 2/4 subjects, no grade 4 events were observed.
- The evidence of relapse seen in some patients provides rationale for testing of combination approaches or second generation T-cells designed to overcome the immune suppressive environment of selected tumors.

Dr. Rafael Amado, Adaptimmune's Chief Medical Officer, said, "Adaptimmune's core focus is the development of affinity enhanced T-cell therapies that may offer promising treatment options to patients with a broad range of solid and hematologic malignancies. We are encouraged by the response and survival data we are observing in patients with chemotherapy refractory synovial sarcoma, and we have expanded this trial as we progress the development of our NY-ESO T-cell therapy in this disease. We also continue to see promising clinical outcomes with our NY-ESO T-cell therapy in patients with relapsed or refractory multiple myeloma. And importantly, we continue to refine our proprietary in vitro predictive safety package, which we now utilize to assess each of our candidate T-cell therapies."

In the myeloma update entitled, "Deep phenotypic characterization of NY-ESO TCR engineered T cells and tumor in patients with advanced myeloma", Eduardo Davila, Ph.D., Associate Professor of Microbiology and Immunology at the University of Maryland School of Medicine, Program Leader for Tumor Immunology and Immunotherapy Research Program at the Greenebaum Cancer Center at the University of Maryland, is presenting follow-up data from the Nature Medicine paper (published July 20, 2015) reporting results of the first 20 patients. This update includes data from the full 25 patient cohort, long term follow-up data, and details on NY-ESO-1 T-cell phenotyping and functional data, as well as clinical and basic correlative data in myeloma patients. Patients in this study had an average of 3

prior therapies; 24 percent had received prior transplant and 60 percent have tumors with chromosomal abnormalities. Early studies indicate upregulation of PDL-1 in relapsing tumor. Relapse occurs upon loss of NY-ESO-1^{c259}T in the peripheral blood, suggesting that therapies designed to improve persistence or enhance multi-targeting of tumor would be beneficial. The authors conclude that the depth of responses on study, including a complete response rate of 59 percent, are better than expected for ASCT alone, despite the patient population being advanced with risk factors of tumor chromosomal abnormalities, and prior ASCT. Median overall survival amongst treated patients is 32 months, and median progression free survival is 19 months.

Adaptimmune also presents preclinical data supporting its next first in human study in a poster entitled, “Preclinical safety testing of an Optimized Enhanced-Affinity MAGE-A10 - specific T cell receptor for adoptive T cell therapy”. Andrew Gerry, Ph.D., Director of Preclinical Research at Adaptimmune is providing a summary of the preclinical safety testing of an affinity-enhanced T-cell therapy specific for MAGE-A10, for which a dose escalation study in patients with non-small cell lung cancer is expected to initiate shortly. The Investigational New Drug (IND) application is open, and the study is expected to initiate in 2015. Adaptimmune has the ability to generate multiple TCRs against cancer target antigens and select the optimal TCR based on specificity; the company can then optimize the affinity of the TCR. Once affinity optimized, the company has established an extensive, first-in-class in vitro-based preclinical safety and efficacy package including molecular peptide mapping, 2D and 3D primary cell line screening, and alloreactivity screening, which capitalizes on the ability to map the linear peptide target of the TCR. The authors of the poster conclude that Adaptimmune’s preclinical strategy has been shown to be able to predict off target toxicity observed in a prior study with a MAGE-A3 TCR. This strategy, under continuing refinement, will be used for all new candidate enhanced affinity TCRs for adoptive T cell therapy for cancer and other diseases.

Adaptimmune’s affinity enhanced 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 T-cell receptor (TCR) 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 an affinity enhanced T-cell therapy targeting the NY-ESO cancer antigen. Its NY-ESO TCR affinity enhanced 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. As of June 30, 2015, 85 patients had been treated with Adaptimmune’s NY-ESO affinity enhanced T-cell therapy: 47 under Adaptimmune’s IND, and 38 under a National Cancer Institute IND. In June 2014, Adaptimmune announced that it had entered into a strategic collaboration and licensing agreement with GlaxoSmithKline (GSK) for the development and

commercialization of the NY-ESO TCR program in partnership with GSK. In addition, Adaptimmune has a number of proprietary programs and its next affinity enhanced T-cell therapy, directed at MAGE A-10, is scheduled to enter the clinic in 2015. 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 190 employees and is located in Oxfordshire, U.K. and Philadelphia, USA. For more information: http://www.adaptimmune.com

Forward-Looking Statements

This press release contains "forward-looking statements," as that term is defined under the Private Securities Litigation Reform Act of 1995 (PSLRA), which statements may be identified by words such as "believe," "may", "will," "estimate," "continue," "anticipate," "intend," "expect" and other words of similar meaning. 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; our ability to submit an IND and successfully advance our technology platform to improve the safety and effectiveness of our existing TCR therapeutic candidates; the rate and degree of market acceptance of T-cell therapy generally and of our TCR therapeutic candidates; government regulation and approval, including, but not limited to, the expected regulatory approval timelines for TCR therapeutic candidates; and our ability to protect our proprietary technology and enforce our intellectual property rights; amongst others. 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 Annual Report on Form 20-F filed with the Securities and Exchange Commission on October 13, 2015. We urge you to consider these factors carefully in evaluating the forward-looking statements herein and are cautioned not to place undue reliance on such forward-looking statements, which are qualified in their entirety by this cautionary statement. 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. We intend that all forward-looking statements be subject to the safe-harbor provisions of the PSLRA.

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