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Adaptimmune Presents Preclinical Data from a New, Wholly-owned SPEAR™ T-cell and a Second Generation SPEAR T-cell at the 31st Annual Meeting of the Society for Immunotherapy for Cancer (SITC)

PHILADELPHIA and OXFORD, United Kingdom, Nov. 11, 2016 (GLOBE NEWSWIRE) -- Adaptimmune Therapeutics plc (Nasdaq:ADAP), a leader in T-cell therapy to treat cancer, today announced the presentation of data at the 2016 Society for Immunotherapy for Cancer (SITC) annual meeting. The posters summarize: (1) preclinical data from Adaptimmune's wholly-owned MAGE-A4 SPEAR™ (Specific Peptide Enhanced Affinity Receptor) T-cells; (2) preclinical data from the Company's second generation SPEAR T-cell, which is engineered to overcome immunosuppression in the tumor microenvironment by blocking the effects of transforming growth factor Beta (TGF-Beta); and (3) a single-patient case study from the Company's ongoing synovial sarcoma study. The 2016 SITC annual meeting is being held at the Gaylord National Hotel & Convention Center in National Harbor, Maryland on November 9 through 13, 2016.

"We are pleased to present the preclinical data that underpins the decision to progress our next SPEAR T-cell candidate, MAGE-A4, into clinical trials and we plan to file an IND in early 2017," said Gwendolyn Binder-Scholl, PhD Adaptimmune's Chief Technology Officer. "MAGE–A4 is an attractive target which is broadly expressed in multiple solid tumors. Our MAGE-A4 SPEAR T-cell candidate has shown promising activity without any major safety concerns identified by our extensive preclinical testing. In addition, we are presenting initial data from a second generation NY-ESO SPEAR T-cell to overcome TGF-Beta immunosuppression in the tumor microenvironment, as well as translational results from a case study of a patient with synovial sarcoma treated with NY-ESO SPEAR T-cells. We believe that this type of data underscores our leadership in the field, and helps us to improve the function of SPEAR T-cells and inform future clinical study design."

Preclinical Testing of Wholly-owned MAGE-A4 SPEAR T-cells
In a poster presentation entitled, "Preclinical evaluation of an optimal-affinity MAGE-A4 T-cell receptor for adoptive T-cell therapy," Daniel Williams, Ph.D. of Adaptimmune, presented data examining MAGE-A4 expression in tumor and non-tumor tissues, and generation of an optimal affinity-enhanced MAGE-A4 SPEAR T-cell.

- MAGE-A4 is a cancer-testis antigen, one of a number of genes with expression in adult tissues restricted to the testes, but also known to be expressed in several tumor types;
- Target validation data indicates that MAGE-A4 is a very attractive target due to widespread and frequent expression in multiple tumor types including non-small cell lung cancer, bladder, melanoma, head and neck, ovarian, esophageal, and gastric

cancers with no detectable expression in non-tumor, non-germline tissues;
- No major safety concerns were identified for MAGE-A4 SPEAR T-cells using Adaptimmune's extensive in vitro preclinical testing platform;
- MAGE-A4 SPEAR T-cells displayed strong cytotoxicity towards MAGE-A4+ melanoma and NSCLC cell lines, and;
- These data will support filing of an IND, with submission planned for early 2017.

Second Generation SPEAR T-cell Engineered to Overcome TGF-Beta Tumor-mediated Immunosuppression

In a poster presentation entitled, "Engineering 2nd generation SPEAR T-cells to overcome TGF-Beta-mediated immunosuppression for adoptive cell therapy," Andrew Gerry, Ph.D. of Adaptimmune presented preclinical data regarding the development of this second generation SPEAR T-cell.

- NY-ESO SPEAR T-cells have shown promising activity in clinical trials for both solid and liquid tumors. However, the depth and durability of response may potentially be affected by inhibitory factors in the tumor microenvironment;
- One such factor is an inhibitory cytokine known as TGF-Beta that inhibits many T-cell functions including proliferation, cytotoxicity, and cytokine production. Truncation of the intracellular signaling domain of the TGF-Beta receptor produces a dominant negative form of this receptor (dnTGFBetaRII), and data from the literature indicate that expression of this dominant negative receptor negates the inhibitory effects of TGF-Beta;
- Adaptimmune engineered a second generation NY-ESO SPEAR T-cell co-expressing dnTGFBetaRII to produce resistance to TGF-Beta immunosuppression, and;
- Data indicate that these second generation NY-ESO SPEAR T-cells co-expressing dnTGFBetaRII are resistant to inhibition by TGF-Beta in vitro.

Case Study Demonstrating Long-term SPEAR T-cell Persistence and Maintenance of Tumoricidal Activity

In a poster presentation entitled, "Case Report: Specific Peptide Enhanced Affinity Receptor T-Cells (SPEAR T-cells) demonstrate long-term persistence and both in vivo and ex vivo tumoricidal activity," Samik Basu M.D. and Gareth Betts Ph.D., both of Adaptimmune, presented translational data from a single patient who was treated in October 2013 in Cohort 1 of the ongoing study of NY-ESO SPEAR T-cell in synovial sarcoma. This patient was included in analyses that have been previously presented.

- Data indicate that NY-ESO SPEAR T-cells have long-term persistence as they were readily detectable in the patient's peripheral blood at 28 months post-infusion;
- These cells exhibited markers of long-term, self-renewing memory T-cells with minimal expression of phenotypic markers of exhaustion;
- NY-ESO SPEAR T-cells retained tumoricidal activity when they were evaluated ex vivo against tumor targets exhibiting substantial killing of NY-ESO-1+ cells without additional re-stimulation, and;
- Mechanisms underlying tumor progression remain under investigation and broadly appear to be related to T-cell exclusion by tumor, supporting consideration of rational combination study designs.

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. These include SPEAR T-cell therapies targeting the MAGE-A10 and AFP cancer antigens, which both have open INDs, and a further SPEAR T-cell therapy targeting the MAGE-A4 cancer antigen that is in pre-clinical phase with IND acceptance targeted for 2017. 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 250 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 November 10, 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.

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