TScan Therapeutics Announces Upcoming Presentations at the 63rd American Society of Hematology Annual Meeting and Exposition

November 4, 2021

WALTHAM, Mass., Nov. 04, 2021 (GLOBE NEWSWIRE) -- TScan Therapeutics, Inc. (Nasdaq: TCRX), a biopharmaceutical company focused on the development of T-cell receptor (TCR) engineered T cell therapies (TCR-T) for the treatment of patients with cancer, today announced that two abstracts related to its lead liquid tumor candidates TSC-100 and TSC-101 have been accepted for poster presentations at the upcoming American Society of Hematology (ASH) Annual Meeting and Exposition, being held from December 11-14, 2021. Abstracts are available on the ASH website at www.hematology.org. TSC-100 and TSC-101 are TCR-T cell products directed against the minor histocompatibility antigens HA-1 and HA-2, respectively, which are found only on blood cells. TScan is developing these products to prevent relapse following hematopoietic cell transplant (HCT) in myeloid leukemia. The Company plans to file investigational new drug applications (INDs) for both programs before the end of 2021.

The current standard of care for the treatment of myeloid leukemia is HCT, which can provide a permanent cure but has a relapse rate of up to 50%, especially if the transplant uses reduced intensity conditioning (RIC), which is easier for patients to tolerate but typically does not completely eliminate their leukemia. TScan's program is based on the well-established observation that patients who are mismatched with their donors for minor histocompatibility antigens such as HA-1 or HA-2, and naturally mount a T cell response against those antigens, show significantly lower relapse rates following HCT. By developing TSC-100 and TSC-101, TScan aims to recreate this natural graft versus leukemia response in order to prevent relapse in patients undergoing HCT.

"We are excited to bring TSC-100 and TSC-101 to patients who are at risk of a devastating relapse after undergoing a demanding HCT," said David Southwell, President and Chief Executive Officer of TScan Therapeutics. "We believe we are the only company that is advancing a T cell therapy product to safely reduce the risk of relapse, potentially addressing an important gap in the current leukemia treatment paradigm."

As described in its Nayar R. et al. abstract, TScan used its proprietary TCR discovery platform known as ReceptorScan to screen approximately 237 million CD8+ cells from five healthy HA-2-negative donors and identify approximately 1,302 natural TCRs that recognize HA-2. These were then narrowed down to 15 TCRs with the highest surface expression and greatest affinity for the HA-2 peptide. The Company further evaluated the top five TCRs for off-target cross-reactivity against the entire human proteome using TScan's proprietary TargetScan platform, identifying TCR-101 as the most active TCR with the lowest off-target activity. TScan previously used the same process to identify TCR-100, an HA-1-specific TCR, for its TSC-100 program. The discovery of TCR-100 was presented at the 2020 Annual Meeting of the Society for Immunotherapy of Cancer (SITC) and can be accessed here. Working together, ReceptorScan and TargetScan give TScan the ability to discover the most effective and safest possible fully human TCR for any given antigen.

In the Chattopadhyay et al. abstract, the Company describes the manufacturing process and Phase 1 clinical development plans for TSC-100 and TSC-101. TScan has developed a proprietary non-viral transposon/transposase delivery system known as T-Integrate which enables cost-effective, rapid and consistent cell manufacturing with short development timelines. This non-viral vector allows for a greater cargo size which TScan uses to further augment the function of TSC-100 and TSC-101 by encoding both the alpha and beta chains of the CD8 co-receptor into the vector. In each case, the final cell product is a mixture of cytotoxic and helper T cells, both of which have been engineered to recognize HA-1 or HA-2.

As described in the Chattopadhyay et al. abstract, TScan plans to initiate a multi-arm, controlled Phase 1/2 clinical trial to investigate the safety and efficacy of TSC-100 and TSC-101 in patients with acute myeloid leukemia (AML), acute lymphoblastic leukemia (ALL) and myelodysplastic syndromes (MDS) that are undergoing HCT following RIC. Donors in this study will be haploidentical, which are typically family members who are half-matched on tissue HLA types. Such haploidentical donors maximize the chances that patients and donors are mismatched for the minor antigens HA-1 or HA-2. HA-1-positive patients will be assigned to the TSC-100 treatment arm, whereas HA-2-positive patients will be assigned to the TSC-101 treatment arm. Patients who are negative for both antigens or who are not mismatched to their donor will be assigned to the standard-of-care arm, which will serve as a control as historical data shows that antigen mismatch does not on its own affect relapse rates. It is expected that approximately 40% of patients will qualify for either TSC-100 or TSC-101.

Primary endpoints of the study include safety and dose-finding, and secondary and exploratory endpoints include relapse rate versus standard-of-care as well as quantitative biological readouts including minimal residual disease and kinetics of donor chimerism. Patient recruitment will begin in Q1 2022. Once the recommended Phase 2 dose has been identified, the study will transition to a Phase 2 to assess relapse rates of treated patients versus the standard-of-care arm.

"The rapid advancement of our liquid tumor programs into the clinic highlights the value of our proprietary technology platform," said Gavin MacBeath, Ph.D., Chief Scientific Officer of TScan Therapeutics. "Using TargetScan and ReceptorScan, we were able to rapidly identify high affinity, naturally occurring TCRs and to de-risk their clinical development by exhaustively screening for off-target effects. Using T-Integrate and our internal GMP facility, we are able to efficiently manufacture genetically reprogrammed T cells with additional features that further enhance their function."

Details for the ASH 2021 poster presentations are as follows:

Title: Product Characteristics and Multi-Arm Clinical Trial Design for TSC-100 and TSC-101, TCR-T Cells That Target Leukemia Following Hematopoietic Cell Transplantation
Presenter: Shrikanta Chattopadhyay, M.D., MBBS, TScan Therapeutics
Author: Chattopadhyay et al.
Abstract #: 153844

Session Type: Poster Presentation
Session: Cellular Immunotherapies: Clinical
Date & Time: Monday, December 13, 2021, 6:00-8:00 pm ET

Title: Discovery of TSC-101: A First-in-Class Natural HA-2-Specific TCR to Treat Leukemia Following Hematopoietic Stem Cell Transplant Therapy
Presenter: Gavin MacBeath, Ph.D., TScan Therapeutics
Author: Nayar et al.
Abstract #: 151317
Session Type: Poster Presentation
Session: Cellular Immunotherapies: Basic and Translational
Date & Time: Saturday, December 11, 2021, 5:30-7:30 pm ET

Upon presentation, each poster will be available on the "Publications" section of the Company's website at https://www.tscan.com/technology/publications/.

About TScan Therapeutics, Inc.

TScan is a biopharmaceutical company focused on the development of T-cell receptor (TCR) engineered T cell therapies (TCR-T) for the treatment of patients with cancer. The company's lead liquid tumor TCR-T therapy candidates, TSC-100 and TSC-101, are in development for the treatment of patients with hematologic malignancies to eliminate residual leukemia and prevent relapse after hematopoietic stem cell transplantation. The company is also developing multiplexed TCR-T therapy candidates for the treatment of various solid tumors.

Forward-Looking Statements

This press release may contain forward-looking statements and information within the meaning of The Private Securities Litigation Reform Act of 1995 and other federal securities laws. The use of words such as "may," "will," "could," "should," "expects," "intends," "plans," "anticipates," "believes," "estimates," "predicts," "projects," "seeks," "endeavor," "potential," "continue" or the negative of such words or other similar expressions can be used to identify forward-looking statements. The express or implied forward-looking statements included in this press release are only predictions and are subject to a number of risks, uncertainties and assumptions, including, without limitation risks set forth under the caption "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" sections of TScan's Quarterly Report on Form 10-Q for the quarter ended June 30, 2021, which is on file with the Securities and Exchange Commission (SEC) and available on the SEC's website at https://www.sec.gov/. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this press release may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. You should not rely upon forward-looking statements as predictions of future events. Although TScan believes that the expectations reflected in the forward-looking statements are reasonable, it cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. Moreover, except as required by law, neither TScan nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements included in this press release. Any forward-looking statement included in this press release speaks only as of the date on which it was made. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as required by law.

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