TCR² Therapeutics Publishes First Peer-Reviewed Data Demonstrating Superior Anti-Tumor Activity of the Company's Novel TRuC™-T Cells

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- Preclinical study results published in Nature Communications show superior anti-tumor activity of T cell receptor fusion construct T cells (TRuC™)-T cells compared to chimeric antigen receptor (CAR)-T cells in several mouse models
- Enhanced *in vivo* activity of TRuC-T cells over CAR-T cells and reduced cytokine release relates to profound differences in T cell signaling

CAMBRIDGE, Mass., May 07, 2019 (GLOBE NEWSWIRE) -- TCR^{2}Therapeutics Inc. (TCR^2) (Nasdaq: TCRR), a clinical-stage immunotherapy company developing the next generation of novel T cell therapies for patients suffering from cancer, today announced online publication of preclinical data in Nature Communications (https://www.nature.com/articles/s41467-019-10097-0). The paper is entitled, "Synthetic TRuC receptors engaging the complete T cell receptor for potent anti-tumor response," and shows in several mouse models a higher anti-tumor activity of the company's proprietary T cell receptor (TCR) fusion construct T cells (TRuC™)-T cells compared to chimeric antigen receptor (CAR)-T cells. The findings suggest profound differences in signaling between TRuC-T and CAR-T cells.

"We report that fusion of an antibody-based binding domain to TCR subunits can effectively reprogram an intact TCR complex to recognize tumor surface antigens independent of human leukocyte antigens, or HLA. Unlike CARs, our TRuC variants become a functional component of the natural TCR complex and trigger a potent anti-tumor response without using an extra co-stimulatory domain. Of note, TRuC-T cells produce significantly less cytokines than CAR-T cells, potentially translating into to a better safety profile," said Patrick A. Baeuerle, Ph.D., an internationally renowned cancer immunologist who invented TCR^{2}s proprietary TRuC platform and co-founded the company. Dr. Baeuerle is Executive Partner of MPM Capital, member of TCR^{2}s Board of Directors, and lead author of the study.

"Our preclinical findings suggest that TRuC-T cell activation and signaling through the complete TCR allows for enhanced T cell performance against both localized and disseminated tumors. Superior performance vis-à-vis CAR-T cells may relate to better tumor penetration, longer persistence, and/or less exhaustion of TRuC-T cells by the tumor microenvironment," added Dr. Baeuerle.

The TCR is a complex of six different subunits that interact with each other in a distinct and coordinated manner to determine the strength, duration, and quality of signaling inside T cells. Adoptive T cell therapies utilizing the entire TCR have seen greater success to date in treating solid tumors compared with CAR-T cells. However, current TCR therapies rely on matching HLA, which limits the patient population and slows down patient recruitment. TCR^{2}s proprietary TRuC platform addresses this limitation by HLA-independent antibody binding to surface targets. Different from CAR-T cells, TRuC-T cells benefit from all regulatory elements of the TCR complex for a powerful and well-controlled anti-tumor response.

"Our first published results further validate a TRuC-T cell platform that we believe has the potential to overcome the limitations of existing T cell therapies," said Garry Menzel, Ph.D., President and Chief Executive Officer of TCR^2 Therapeutics. "We hope to transform the treatment of blood borne and solid tumors with greater efficacy and safety by signaling through a full TCR that is independent of HLA. We recently initiated clinical trials for our lead TRuC-T cell program TC-210 and have a broad portfolio of other treatments moving toward the clinic."

A link to the publication can be found on the TCR^2 website in the publication section.

About TCR^2 Therapeutics

TCR^2 Therapeutics Inc. is a clinical-stage immunotherapy company developing the next generation of novel T cell therapies for patients suffering from cancer. TCR^{2}s proprietary T cell receptor (TCR) Fusion Construct T cells (TRuC-T™ cells) specifically recognize and kill cancer cells by harnessing signaling from the entire TCR, independent of human leukocyte antigens (HLA). In preclinical studies, TRuC-T cells have demonstrated superior anti-tumor activity compared to chimeric antigen receptor T cells (CAR-T cells), while exhibiting lower levels of cytokine release. The Company's lead TRuC-T cell product candidate, TC-210, is currently being studied in a Phase 1/2 clinical trial to treat patients with mesothelin-positive non-small cell lung cancer (NSCLC), ovarian cancer, malignant pleural/peritoneal mesothelioma, and cholangiocarincoma. For more information about TCR^2, please visit www.tcr2.com.

Forward-looking Statements

This press release contains 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. These forward-looking statements include, but are not limited to, express or implied statements regarding TCR^2's plans to the generation of clinical data for TC-210 in the second half of 2019 and TCR^2's plans to advance its first three TRuC product candidates into clinical trials by the first half of 2020, and the potential of TCR^{2}s platform and product candidates to overcome the limitations faced by existing T cell therapies and transform the treatment of blood cancers and solid tumors.

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: uncertainties inherent in clinical studies and in the availability and timing of data from ongoing clinical studies; whether interim results from a clinical trial will be predictive of the final results of the trial; whether results from preclinical studies or earlier clinical studies will be predictive of the results of future trials; the expected timing of submissions for regulatory approval or review by

governmental authorities, including review under accelerated approval processes; orphan drug designation eligibility; regulatory approvals to conduct trials or to market products; TCR^2's ability to maintain sufficient manufacturing capabilities to support its research, development and commercialization efforts, whether TCR^2's cash resources will be sufficient to fund TCR^2's foreseeable and unforeseeable operating expenses and capital expenditure requirements; and other risks set forth under the caption "Risk Factors" in TCR^2's most recent Annual Report on Form 10-K and its other filings with the Securities and Exchange Commission. 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 TCR^2 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 TCR^2 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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