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Eureka Therapeutics publicizes preclinical study validating ARTEMIS Platform

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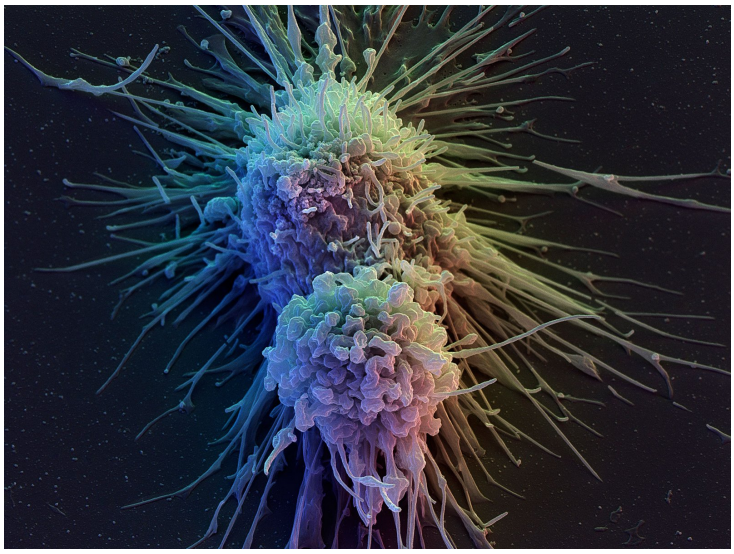

Eureka Therapeutics has announced publication in Cell Discovery validating its ARTEMIS antibody-TCR (AbTCR) Receptor Platform which lowered Cytokine Release Syndrome (CRS) and neurotoxicity in a preclinical study.

The data in this publication demonstrates the ability of AbTCR-expressing T-cells to match the cancer-killing potency of anti-CD19 chimeric antigen receptor (CAR) T-cells but with a significant reduction in inflammatory cytokine release. The publication is co-authored with Dr. Stephan A. Grupp and Dr. David Barrett of the Children's Hospital of Philadelphia.

"The data suggest a critical step toward the introduction of a potentially safer T-cell therapy than the current iteration of CAR-T therapy. It is exciting to see the potential of Eureka's ARTEMIS technology as CRS and related adverse events remain a major challenge today for physicians using CAR-T therapy," said Dr. Stephan A. Grupp.

- While CAR-T-cell therapies have shown remarkable efficacy in lymphomas and leukemias, life-threatening side effects such as CRS and neurotoxicity have limited CAR-T therapy to specialized centers and to later lines of treatment.
- The study discusses the design of the ARTEMIS AbTCR receptor and why its novel design contributes to a lower release of cytokines as compared to CAR-T-cells.

- In May 2018, Eureka presented positive preliminary results at the American Society of Clinical Oncology (ASCO) annual meeting from a proof-of-concept study of ARTEMIS T-cells engineered with Eureka's proprietary human anti-CD19 binder (ET190L1-ARTEMIS) in patients with relapsed and refractory (r/r) B-cell lymphoma.
- In September 2018, Eureka presented positive preliminary results at the CAR-TCR Summit from a proof-of-concept study of ARTEMIS T-cells engineered with Eureka's proprietary human anti-AFP TCR-mimic binder (ET140202) in patients with AFP-positive hepatocellular carcinoma (HCC), the most prevalent form of liver cancer.

- In both studies, the ARTEMIS T-cells were well tolerated in patients with no observed CRS or neurotoxicity. In the liver cancer study, tumor regression was observed in three out of six patients, and one patient with lung metastases achieved a complete response (CR).

“Conventional wisdom has been that CRS is a necessary evil for the efficacy of CAR-T therapies. We have shown that efficacy and CRS have the potential to be decoupled. A safer T-cell therapy could result in a larger therapeutic window for patients, as well as a lower direct and indirect cost to patients and the healthcare system overall,” said Dr. Cheng Liu, President and Chief Executive Officer of Eureka Therapeutics.

Dr. Liu continued, “Our ARTEMIS AbTCR receptor serves as the backbone to which additional components can be added with the goal of optimizing T-cell activation and expansion. It is a very versatile platform. We can engineer the ARTEMIS receptor not only with conventional binding domains against cell surface antigens, but also with TCR-mimic antibody binding domains that target intracellular antigen peptides presented on the MHC complex to address solid tumors, an area that has been poorly addressed by current CAR-T therapies.” Fu