Cellectis Publishes Novel Methods to Improve the Clinical Use of Chimeric Antigen Receptor T-Cell Therapy in Scientific Reports

CubiCAR, a Next Generation CAR, Allows for the Purification, Detection and Efficient Elimination of CAR T-Cells

June 12, 2018 – New York (N.Y.) – Cellectis (Alternext: ALCLS; Nasdaq: CLLS), a biopharmaceutical company focused on developing immunotherapies based on gene edited CAR T-cells (UCART), today announced the publication of a study in *Scientific Reports*, a Nature Publishing Group journal, describing the development of the CubiCAR, an all-in-one Chimeric Antigen Receptor (CAR) architecture with an embedded multi-functional tag for purification, detection and elimination of CAR T-cells. This added versatility has the potential to streamline the manufacturing of CAR T-cells to allow their tracking and efficiently eliminate CAR T-cells in clinical settings.

"The power and novelty of this technology lies in the integration of these multiple functions in one unique CAR molecule. To identify an optimal CAR architecture, we selected 15 different CAR constructs and evaluated their ability to enable T-cell depletion and promote tumor eradication," said Julien Valton, Ph.D., Innovation Team Leader of Cellectis. "The development of this novel architecture was in collaboration with our colleagues at Allogene."

"The CubiCAR architecture represents a major step forward in the development of CAR-T therapies in the treatment of various cancers," added Philippe Duchateau, Ph.D., Chief Scientific Officer of Cellectis. "Not only is the CubiCAR architecture an integrated, compact safeguard allowing for the fast and efficient depletion of CAR T-cells, it is also compatible with multiple scFvs that are designed against different targets, which gives it the unique potential to make CAR T-cell immunotherapies safer."

"The transformational impact of autologous CAR T therapy for the treatment of hematologic cancers has been firmly established. We plan to evaluate this CubiCAR approach and other novel CAR T engineering developed in partnership with our colleagues at Cellectis across our extensive CAR T pipeline," said Barbra Sasu, Ph.D., Chief Scientific Officer of Allogene. "As we look to the future of allogeneic cell therapy, we can apply the scientific understanding gained from earlier therapies to the next wave of innovation to develop best-in-class allogeneic cell therapy."

Julien Valton, Ph.D., Innovation Team Leader, Cellular Engineering & Adoptive CAR T-Cell Immunotherapy
Dr. Julien Valton obtained his Ph.D. at the University Joseph Fourier in Grenoble, France, where he was trained as an enzymologist. He then joined the Yale School of Medicine to apply his knowledge to therapeutic research by investigating the mechanism of inhibition of receptor tyrosine kinases that are involved in the development of

gastrointestinal cancer. In 2009, he moved a step further into the field of applied science by joining the Innovation Department of Cellectis, where he actively participated in using and improving TALEN® gene editing technology for targeted gene therapy and genome engineering. He is now using TALEN® along with protein engineering techniques to develop the next-generation CAR T-cells to treat different malignancies.

A Versatile Safeguard for Chimeric Antigen Receptor T-Cell Immunotherapies

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About Cellectis
Cellectis is a clinical-stage biopharmaceutical company focused on developing a new generation of cancer immunotherapies based on gene-edited T-cells (UCART). By capitalizing on its 18 years of expertise in gene editing – built on its flagship TALEN® technology and pioneering electroporation system PulseAgile – Cellectis uses the power of the immune system to target and eradicate cancer cells.

Using its life-science-focused, pioneering genome engineering technologies, Cellectis' goal is to create innovative products in multiple fields and with various target markets.
Cellectis is listed on the Nasdaq market (ticker: CLLS) and on Euronext Growth (ticker: ALCLS). To find out more about us, visit our website: www.cellectis.com

Talking about gene editing? We do it. TALEN® is a registered trademark owned by Cellectis.

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subsequent filings Cellectis makes with the Securities Exchange Commission from time to time. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons why actual results could differ materially from those anticipated in the forward-looking statements, even if new information becomes available in the future.

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