PRESS RELEASE

First in Human Administration of UCART123 in Cellectis' AML Phase I Clinical Trial at Weill Cornell Medicine, NewYork-Presbyterian Hospital

UCART123 is the First U.S. Gene Edited, Off-the-Shelf CAR T-Cell Program

June 27, 2017 – New York (N.Y.) – Cellectis (Alternext: ALCLS; Nasdaq: CLLS), a clinical-stage biopharmaceutical company focused on developing immunotherapies based on gene-edited CAR T-cells (UCART), announced today the first administration in the Phase I clinical study in Acute Myeloid Leukemia (AML) for its investigational product UCART123, one of the Company's wholly-controlled TALEN® gene-edited product candidates. This marks the first allogeneic, "off-the-shelf" gene-edited CAR T-cell product candidate targeting CD123 to be investigated in clinical trials.

This clinical research in AML is led by Principal Investigator Dr. Gail J. Roboz, Professor of Medicine at Weill Cornell Medicine and Director of the Clinical and Translational Leukemia Programs at Weill Cornell Medicine and NewYork-Presbyterian Hospital.

The clinical trial will investigate the safety and efficacy of UCART123 in patients with AML. AML is a devastating clonal hematopoietic stem cell neoplasm which is characterized by uncontrolled proliferation and accumulation of leukemic blasts in bone marrow, peripheral blood and, occasionally, in other tissues. These cells disrupt normal hematopoiesis and rapidly cause bone marrow failure. In the U.S., there are an estimated 19,950 new AML cases per year, with 10,430 estimated deaths per year. While complete response rates can be as high as 80 percent in younger patients who undergo initial induction cytotoxic chemotherapy, the majority of AML patients relapse and die from the disease. AML patients with high-risk genetic features have an especially urgent unmet medical need, as their outcomes are dismal with all existing treatment modalities, including allogeneic stem cell transplantation.

"After being granted rapid approval from Regulatory Authorities and Institutional Review Boards to initiate UCART123 studies, the enrollment and treatment of the first patient represents a major milestone for Cellectis, and we are eager to hit the ground running with the recruitment of our first patient for our second UCART123 Phase I study in BPDCN soon," said Dr. Loan Hoang-Sayag, Cellectis Chief Medical Officer. "This first program targeting CD123 will be a paradigm shift for our Company, as it will provide a wealth of valuable additional knowledge and data to drive our gene-edited allogeneic CAR T-cell platform."

"We are excited to be enrolling our first patient with UCART123 and are hopeful that this novel immunotherapy modality will prove to be a significant and effective weapon against AML," said Dr. Roboz.

The clinical trial is part of a strategic translational research alliance that was formed between Cellectis and Weill Cornell Medicine in 2015. Dr. Monica Guzman, an associate

professor of pharmacology in medicine at Weill Cornell Medicine, is co-principal investigator whose work focuses on preclinical and early-stage testing to optimize the development of stem cell-targeted cancer drugs.

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 17 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 the NYSE Alternext market (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 the Cellectis Group.

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Disclaimer

This press release contains "forward-looking" statements that are based on our management's current expectations and assumptions and on information currently available to management. Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. The risks and uncertainties include, but are not limited to, the risk that the preliminary results from our product candidates will not continue or be repeated, the risk of not maintaining regulatory approval to pursue UCART123 clinical trials, the risk of not obtaining regulatory approvals to commence clinical studies on UCART123 in other countries or on other UCART product candidates, the risk that any one or more of our product candidates will not be successfully developed and commercialized. Further information on the risks factors that may affect company business and financial performance, is included in filings Cellectis makes with the Security Exchange Commission from time to time and its financial reports. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons 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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