PRESS RELEASE

Cellectis to Showcase Clinical Data from AMELI-01 and Preclinical Data from UCARTCS1 at ASH 2022

- *AMELI-01 (evaluating UCART123) abstract, selected for oral presentation, highlights that adding alemtuzumab was associated with improved activity*

- *UCARTCS1 abstract, selected for poster presentation, demonstrated anti-tumor activity in vivo and in vitro supporting the potential benefit of UCARTCS1 first in-human study for patients with r/r MM*

New York, NY – November 3, 2022 - Cellectis (the "Company") (Euronext Growth: ALCLS - NASDAQ: CLLS), a clinical-stage biotechnology company using its pioneering gene-editing platform to develop life-saving cell and gene therapies, today announced the release of two abstracts, which were accepted for presentation at the 64th American Society of Hematology (ASH) Annual Meeting taking place from December 10 to 13, 2022.

The Company will present, in an oral session on December 12, preliminary clinical data from its AMELI-01 clinical trial (evaluating UCART123) in patients with relapsed/refractory acute myeloid leukemia (r/r AML). Amsterdam University Medical Center (location VUmc), in collaboration with Cellectis, will also present, in a poster session on December 10, preclinical data supporting anti-tumor activity for Cellectis' UCARTCS1 product candidate, which is being evaluated in clinical trial, MELANI-01, for patients with relapsed/refractory multiple myeloma (r/r MM).

"Cellectis is excited to share preliminary clinical data from our AMELI-01 clinical trial, evaluating UCART123 in patients with relapsed and/or refractory acute myeloid leukemia. This trial addresses a patient population with severe unmet medical needs and no additional therapeutic options. We hope our off-the-shelf approach through gene editing will serve as the next step in improving outcomes in patients with this disease," said Mark Frattini, M.D., Ph.D., Chief Medical Officer at Cellectis.

Cellectis' oral presentation on AMELI-01:

AMELI-01 investigating UCART123 product candidate in r/r AML

The abstract includes preliminary clinical data from the Phase 1, open-label, dose-escalation trial, AMELI-01, in patients with r/r AML having received UCART123 following lymphodepletion (LD) with either fludarabine and cyclophosphamide (FC) or FC with alemtuzumab (FCA). The data show that adding alemtuzumab to the FC regimen was associated with improved LD and significantly higher UCART123 cell expansion, which correlated with improved activity.

UCART123 is a novel and genetically modified allogeneic T-cell product manufactured from healthy donor cells. Donor-derived T-cells are transduced using a lentiviral vector to express

the anti-CD123 chimeric antigen receptor (CAR) and are further modified using Cellectis' TALEN® technology to disrupt the T-cell receptor alpha constant (TRAC) and CD52 genes to minimize risk of graft-vs-host disease (GvHD) and allow use of anti-CD52–directed therapy as a component of the LD regimen, respectively.

These data are encouraging and support the continued enrollment into the study.

Presentation Details:

Title: AMELI-01: A Phase I Trial of UCART123v1.2, an Anti-CD123 Allogeneic CAR-T Cell Product, in Adult Patients with Relapsed or Refractory (R/R) CD123+ Acute Myeloid Leukemia (AML)
Publication Number: 981
Presenter: David A. Sallman, MD, Moffitt Cancer Center, Department of Malignant Hematology, Tampa, FL
Session Name: 704. Cellular Immunotherapies: Early Phase and Investigational Therapies: Acute Leukemia and Hodgkin Lymphoma
Date, Time, Location: Monday, December 12, 2022; 5:00PM; Ernest N. Morial Convention Center, Hall E

Link to abstract, here.

Poster Presentation on UCARTCS1, in collaboration with Amsterdam UMC

The abstract includes preclinical data evaluating *in vitro* activity of UCARTCS1 against MM cell lines and bone marrow samples from MM patients, as well as *in vivo* activity in a MM mouse model. The potential impact of previous therapy and tumor characteristics on the *in vitro* efficacy of UCARTCS1 was also investigated.

The preclinical data that will be presented demonstrates anti-tumor activity *in vitro* and *in vivo*, supporting the potential benefit of UCARTCS1 first in-human study of, MELANI-01 a Phase 1, open-label, dose-escalation trial, for patients with r/r MM.

UCARTCS1 is a genetically modified allogeneic T-cell product manufactured from healthy donor cells. Donor-derived T-cells are transduced using a lentiviral vector to express the anti-CS1 CAR and are further modified using Cellectis' TALEN® gene editing technology to disrupt the T-cell receptor alpha constant (TRAC) and CS1 genes to minimize risk of graft-vs-host disease (GvHD) and avoid fratricide during production, respectively.

Presentation Details/Poster Abstract Session:

Title: Preclinical Activity of Allogeneic CS1-Specific CAR T-Cells (UCARTCS1) in Multiple Myeloma
Publication Number: 1833
Presenter: C.L.B.M. Korst, Amsterdam UMC location Vrije Universiteit Amsterdam, Department of Hematology
Session Name: 651. Multiple Myeloma and Plasma Cell Dyscrasias: Basic and Translational: Poster I
Date, Time, Location: Saturday, December 10, 2022; 5:30 PM - 7:30 PM; Ernest N. Morial Convention Center, Hall D

Link to abstract, here.

About Cellectis

Cellectis is a clinical-stage biotechnology company using its pioneering gene-editing platform to develop life-saving cell and gene therapies. Cellectis utilizes an allogeneic approach for CAR-T immunotherapies in oncology, pioneering the concept of off-the-shelf and ready-to-use gene-edited CAR T-cells to treat cancer patients, and a platform to make therapeutic gene editing in hemopoietic stem cells for various diseases. As a clinical-stage biopharmaceutical company with over 22 years of experience and expertise in gene editing, Cellectis is developing life-changing product candidates utilizing TALEN®, its gene editing technology, and PulseAgile, its pioneering electroporation system to harness the power of the immune system in order to treat diseases with unmet medical needs. Cellectis' headquarters are in Paris, France, with locations in New York, New York and Raleigh, North Carolina. Cellectis is listed on the Nasdaq Global Market (ticker: CLLS) and on Euronext Growth (ticker: ALCLS).

For more information, visit www.cellectis.com. Follow Cellectis on social media: @cellectis, LinkedIn and YouTube.

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Forward-looking Statements
This press release contains "forward-looking" statements within the meaning of applicable securities laws, including the Private Securities Litigation Reform Act of 1995. Forward-looking statements may be identified by words such as "anticipate," "believe," "intend", "expect," "plan," "scheduled," "could," "may" and "will," or the negative of these and similar expressions. These forward-looking statements, which are based on our management's current expectations and assumptions and on information currently available to management. Forward-looking statements include statements about the ability to progress the AMELI-01 and MELANI-01 trials and present any data from the trial; the clinical outcomes which may materially change as more patient data become available, and the potential benefits of our UCART product candidates. These forward-looking statements are made in light of information currently available to us and are subject to numerous risks and uncertainties, including with respect to the numerous risks associated with biopharmaceutical product candidate development. With respect to our cash runway, our operating plans, including product development plans, may change as a result of various factors, including factors currently unknown to us. Furthermore, many other important factors, including those described in our Annual Report on Form 20-F and the financial report (including the management report) for the year ended December 31, 2021 and subsequent filings Cellectis makes with the Securities Exchange Commission from time to time, as well as other known and unknown risks and uncertainties may adversely affect such forward-looking statements and cause our actual results, performance or achievements

to be materially different from those expressed or implied by the forward-looking statements. 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.