PRESS RELEASE

Cellectis Announces Oral Presentation on AMELI-01 and Poster Presentation on Multiplex Engineering for Superior Generation of CAR T-cells at the American Society of Gene and Cell Therapy (ASGCT) Annual Meeting

New York, NY – May 2, 2023 - 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 that it will present clinical data on its Phase 1 AMELI-01 clinical trial (evaluating UCART123) that were presented in an oral presentation at the 64th American Society of Hematology (ASH) annual meeting, as well as preclinical data on multiplex engineering for superior generation of CAR T-cells, at the American Society of Gene and Cell Therapy (ASGCT) Annual Meeting taking place May 16-20, 2023 in Los Angeles, CA.

Oral presentation:

AMELI-01, a study evaluating UCART123, an allogeneic CAR T-cell product candidate, in relapsed/refractory acute myeloid leukemia (r/r AML)

The presentation includes preliminary clinical data from the Phase 1, open-label, dose-escalation trial, AMELI-01, in patients with r/r AML administered 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.

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)
Session Date/Time: 5/17/2023 - 3:45 PM – 5:30PM PDT
Session Title: CAR Engineering and Production Advances for Targeting Hematologic and Solid Tumor Malignancies
Session Room: 502 AB
Final Abstract Number: 94

Poster presentation: Expanding the scope of multiplex engineering for superior generation of efficient CAR T-cells

CAR T-cell therapies have revolutionized the way we can treat hematological malignancies. However, additional physiological and biological barriers imposed by the hostile tumor microenvironment has limited the ability to target solid tumors. In recent years, advances in genomic-based cellular engineering are bringing us a step closer to conquer solid tumors. This glimpse of success also demonstrated that we need to be able to creatively customize and equip CAR T-cells to target these tumors.

In this presentation, Cellectis shows how we can use its state-of-the-art TALEN® technology to precisely edit up to four loci simultaneously while delivering several additional payloads to increase the efficacy and persistence of CAR T-cells.

Cellectis takes it a step further and uses a curated combination of genome engineering technologies including TALE base editors to leverage the efficiency of multiplexed gene editing while safeguarding genomic integrity. By carefully choosing a range of gene and cell engineering approaches, Cellectis can develop CAR T-cells focused on unmet medical needs with a high level of efficiency for gene editing and targeted-integration.

Title: Expanding the Scope of Multiplex Engineering for Superior Generation of Efficient CAR T-cells
Session Date/Time: 5/17/2023 12:00 PM PDT
Session Title: Wednesday Poster Session
Poster Board Number: 604
Final Abstract Number: 604

Details from the presentations will be available following the event on the Cellectis website at: https://www.cellectis.com/en/investors/scientific-presentations/

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 23 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).

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" 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 advancements, timing and progress of clinical trials, the adequacy and continuity of supply of clinical supply and alemtuzumab, the ability of an anti-CD52 as alemtuzumab to improve any efficacy and the potential benefit of 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, 2022 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.

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