UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16 UNDER THE SECURITIES EXCHANGE ACT OF 1934

Date of Report: March 14, 2023

Commission File Number: 001-36891

Cellectis S.A. (Exact Name of registrant as specified in its charter)

8, rue de la Croix Jarry 75013 Paris, France +33 1 81 69 16 00 (Address of principal executive office)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F. Form 20-F [X] Form 40-F []

EXHIBIT INDEX

Exhibit Title

99.1 Press release, dated March 14, 2023

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Cellectis S.A. (Registrant)

Date: March 14, 2023

/s/ André Choulika André Choulika Chief Executive Officer

Cellectis Announces Poster Presentation on TALEN®-edited MUC1 CAR T-cells Targeting Triple Negative Breast Cancer at the American Association of Cancer Research (AACR) Annual Meeting

NEW YORK, March 14, 2023 (GLOBE NEWSWIRE) -- 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 preclinical data exploring purposeful armoring of CAR T-cells to enhance efficacy of MUC1 CAR T-cells in targeting triple-negative breast cancer, will be presented at the American Association of Cancer Research (AACR) Annual Meeting, to be held in Orlando, Florida on April 14-19, 2023.

"We are proud to present updated preclinical data on our product candidate UCARTMUC1 for solid tumors at AACR 2023," said Laurent Poirot, Ph.D., Senior Vice President Immunology at Cellectis. "As immune-therapies continue to develop for solid tumors, the tumor microenvironment (TME) poses many challenges that CAR T-cells need to overcome for efficient tumor cell clearance. Our preclinical data make us confident that UCART MUC1 could be a valuable product candidate for patients with highly unmet medical needs."

Presentation includes:

Poster presentation:

Therapeutic options for triple negative breast cancer (TNBC) remain limited to date despite it being the most aggressive subtype of breast cancers and carrying the poorest prognosis. Tumor-associated MUC1 antigen is overexpressed in a large number of TNBC patients offering an effective discriminatory target for CAR T-cell therapy.

Cellectis will present innovative strategies exploring purposeful armoring of CAR T-cells to boost efficiency while preserving safety. To maintain anti-tumor CAR T-cell activity and proliferation in the hostile TME of solid tumors, Cellectis developed state-of-the-art multiplexed gene editing using high precision TALEN® technology. With that aim, we armored allogeneic CAR T-cells with specific attributes to locally release immune inflammatory cytokines and protect from inhibitory effects of the TGFB1 and PD1 pathways. A combination of strategies using allogeneic CAR T-cells with diverse attributes were evaluated against TNBC tumors in various *in vivo* pre-clinical models. The recirculation pattern of MUC1 CAR T-cells was also explored in relationship with their delivery routes.

Title: Deciphering the benefits of variable delivery routes and molecular armoring to enhance efficacy of MUC1-CAR T-cells in targeting triple-negative breast cancer

Session Title: Adoptive Cell Therapy 1

Presenter: Piril, Erler, Ph.D., Scientist II, Immuno-Oncology, Cellectis **Session Date and time**: Sunday, April 16, 2023, 1:30-5:00 PM ET

Location: Section 37 **Poster Board Number:** 14

Abstract Presentation Number: 899

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).

Forward-looking Statement

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 the timing of our presentation of data and the potential of our preclinical programs. 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.

For further information on Cellectis, please contact:

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Attachment

• AACR 2023-curtain raiser (https://ml.globenewswire.com/Resource/Download/21d5476e-4caf-4abb-bcae-9ed440dec3e1)