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

For the month of May 2022

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 [X]

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):

EXHIBIT INDEX

Exhibit Title

99.1 Press Release dated May 16, 2022

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: May 16, 2022 /s/ André Choulika
André Choulika

Chief Executive Officer

Cellectis Presents Research Data on a Novel Immune-Evasive Universal CAR T-cell at ASGCT

NEW YORK, May 16, 2022 (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 will present its first research data on the development of a novel universal CAR T-cell with immune-evasive properties using TALEN®-gene editing, at the American Society of Cell and Gene Therapy Annual Meeting (ASGCT) being held on May 16-19, 2022. This novel immune-evasive CAR T-cell scaffold evades NK (Natural Killer) cell and alloresponsive T-cell attacks and imparts efficient antitumor activity *in vitro* and *in vivo*.

Cellectis' novel immune-evasive CAR T-cell ($\Delta TRAC_{CAR}\Delta B2M_{HLAE}$), was developed using a combination of TALEN®-mediated gene editing and adeno-associated virus (AAV) dependent gene insertion. $\Delta TRAC_{CAR}\Delta B2M_{HLAE}$ is devoid of $TCR\alpha\beta$ and human leukocyte antigen (HLA) Class I expression and endowed with an engineered surface-exposed HLA-E. These three features could enable CAR T-cells to prevent graft versus host (GvH) reaction and evade the cytolytic activities from alloresponsive T-cells and NK cells.

"Universal CAR T-cell therapies are poised to revolutionize cancer treatment and to improve patient outcomes. Realizing these advantages in an allogeneic setting requires universal CAR T cells that can kill target tumor cells, avoid depletion by the host immune system, and proliferate without attacking host tissues. Cellectis' research suggested that $\Delta TRAC_{CAR}\Delta B2M_{HLAE}$ T-cells evade NK cell and alloresponsive T-cell attacks and showed prolonged antitumor activity in the presence of cytotoxic levels of NK cells. This new cellular scaffold could enable the broad use of universal CAR T-cells in allogeneic settings and holds great promise for clinical applications," said Julien Valton, Ph.D., Vice President Gene Therapy at Cellectis.

Research data showed that:

- $\Delta TRAC_{CAR}\Delta B2M_{HLAE}$ overcame alloresponsive T-cell and NK cells attacks.
- The immune-evasive property of $\Delta TRAC_{CAR}\Delta B2M_{HLAE}$ was similar toward NK cells from healthy donors, acute myeloid leukemia (AML) patients and acute lymphocytic leukemia (ALL) patients.
- $\Delta TRAC_{CAR}\Delta B2M_{HLAE}$ T-cells exhibit prolonged antitumor activity in the presence of cytotoxic levels of NK cells.

Title: Endowing Universal CAR T-cell with Immune-Evasive Properties Using TALEN®-Gene Editing

Session Date: May 16, 2022

Presentation Time: 3:45pm - 4:00pm ET

<u>Location</u>: Walter E. Washington Convention Center <u>Session title</u>: Cell-Based Cancer Immunotherapies I

Room: 207

Final abstract number: 99

The research data will be presented today in an oral presentation. The abstract can be accessed on the ASGCT website, and the oral presentation will be posted on Cellectis' website during the conference.

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 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. As part of its commitment to a cure, Cellectis remains dedicated to its goal of providing lifesaving UCART product candidates for multiple cancers including acute myeloid leukemia (AML), B-cell acute lymphoblastic leukemia (B-ALL) and multiple myeloma (MM). HEAL is a new platform focusing on hemopoietic stem cells to treat blood disorders, immunodeficiencies and lysosomal storage diseases. 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).

AlloCAR T[™] is a trademark of Allogene Therapeutics, Inc.

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

For further information, please contact:

Media contacts:

Pascalyne Wilson, Director, Communications, +33776991433, media@cellectis.com

Margaret Gandolfo, Senior Manager, Communications, +1 (646) 628 0300

Investor Relation contact:

Arthur Stril, Chief Business Officer, +1 (347) 809 5980, investors@cellectis.com Ashley R. Robinson, LifeSci Advisors, +1 (617) 430 7577

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," "would" 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 potential of our research or preclinical programs, and the sufficiency of cash to fund operations. 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 as well as the duration and severity of the COVID-19 pandemic and governmental and regulatory measures implemented in response to the evolving situation. 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.

Attachment

• HLAE PR.pdf (https://ml.globenewswire.com/Resource/Download/2f69fb8e-d2d4-4b81-bbfe-fb13702205ae)