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 of the Securities Exchange Act of 1934

Date of Report: January 3, 2017 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 🗹 Form 40-F 🗌

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

ExhibitTitle99.1Press release, dated January 3, 2017.

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.

January 3, 2017

CELLECTIS S.A.

(Registrant)

By: /s/ André Choulika

André Choulika Chief Executive Officer

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Cellectis Submits IND Application for UCART123, an Allogeneic Gene Edited CAR T-Cell Product Candidate, in AML and BPDCN

NEW YORK--(BUSINESS WIRE)--January 3, 2017--Regulatory News:

Cellectis (Paris:ALCLS) (NASDAQ:CLLS) (Alternext: ALCLS; Nasdaq: CLLS), a biopharmaceutical company focused on developing immunotherapies based on gene edited CAR T-cells (UCART), today announced the submission of an Investigational New Drug (IND) application to the U.S. Food and Drug Administration (FDA) requesting approval to initiate Phase 1 clinical trials of UCART123 the Company's most advanced, wholly owned TALEN® gene edited product candidate in patients with acute myeloid leukemia (AML) and blastic plasmacytoid dendritic cell neoplasm (BPDCN).

Pending regulatory clearance, Cellectis plans to initiate Phase 1 clinical trials in the first half of 2017. This is the first IND filing for human clinical applications of a gene edited allogeneic "off-the-shelf" product candidate in the U.S.

UCART123 is a gene edited T-cell investigational drug that targets CD123, an antigen expressed at the surface of leukemic cells in AML, as well as on leukemic and other tumoral cells in BPDCN.

The UCART123 program was subject to a public hearing by the National Institutes of Health's Recombinant DNA Advisory Committee (RAC) in December 2016, where it received the unanimous approval of the RAC committee members.

AML is a devastating clonal hematopoietic stem cell neoplasm that 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 and death. In the U.S. alone, there are an estimated 19,950 new AML cases per year, with 10,430 estimated deaths per year.

The clinical research at Weill Cornell will be led by principal investigator Dr. Gail J. Roboz, Director of the Clinical and Translational Leukemia Programs and Professor of Medicine.

BPDCN is a very rare and aggressive hematological malignancy that is derived from plasmacytoid dendritic cell precursors. BPDCN is a disease of bone marrow and blood cells but also often affects skin and lymph nodes.

The UCART123 clinical program at MD Anderson will be led by Dr Naveen Pemmaraju, MD, Assistant Professor, and Professor Hagop Kantarjian, MD, Department Chair, Department of Leukemia, Division of Cancer Medicine.

The manufacturing process of Cellectis' allogeneic CAR T-cell product line, Universal CARTs or UCARTs, yields frozen, off-theshelf, engineered CAR T-cells. UCARTs are meant to be readily available CAR T-cells for a large patient population. Their production can be industrialized and standardized with defined pharmaceutical release criteria.

"Following a Pre-IND meeting with the FDA in August 2016 and a NIH-RAC public hearing in December 2016, filing this IND is an important regulatory milestone for the Company. It represents many years of research and development by a dedicated team focused on developing highly innovative UCART products for the benefit of patients", stated Stephan Reynier, Chief Regulatory and Compliance Officer, Cellectis.

Chief Medical Officer, Dr. Loan Hoang-Sayag, commented: "UCART123 represents a unique therapeutic approach for patients with unmet medical needs such as relapsed or refractory AML, high risk AML and BPDCN and we are excited to move this experimental product into clinical development. We have designed robust Phase 1 clinical trials to better understand the potential of UCART123 to address the needs of different patient populations."

Information about ongoing clinical trials are publically available on dedicated websites such as:

<u>www.clinicaltrials.gov</u> in the U.S. <u>www.clinicaltrialsregister.eu</u> in Europe

About Cellectis

Cellectis is a biopharmaceutical company focused on developing immunotherapies based on gene edited CAR T-cells (UCART). The company's mission is to develop a new generation of cancer therapies based on engineered T-cells. Cellectis capitalizes on its 17 years of expertise in genome engineering - based on its flagship TALEN® products and meganucleases and pioneering electroporation PulseAgile technology - to create a new generation of immunotherapies. CAR technologies are designed to target surface antigens expressed on 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.

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 obtaining regulatory approval to commence clinical trials on the 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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