

PRESS RELEASE

Cellectis' Meganuclease Technology Used to Efficiently Prevent Viral Infection

First proof-of-concept for prevention of viral infection using meganucleases published online by Molecular Therapy

Paris, January 19, 2011 – Cellectis (Alternext: ALCLS), announced today that scientists from Cellectis therapeutics, the French National Center For Medical Research (CNRS) and Institut de la Vision (Paris) have used its proprietary meganucleases to successfully prevent infection of cultured cells by a Herpes Simplex virus (HSV-1). The research has just been published online by Molecular Therapy¹ (Mol. Ther. 2011, Jan 11. Epublication ahead of print). These are the first proof-of-concept data showing that meganucleases can prevent viral infection.

In this article, scientists used HSV-1 specific meganucleases engineered by Cellectis to successfully prevent the infection of human cultured cells by HSV-1. Subsequent analysis of the treated cells using deep sequencing techniques showed that inhibition of HSV-1 infection by the anti-HSV-1 meganucleases was associated with cleavage of viral DNA (or virus clipping). When the virus is clipped at a well-chosen and specific location, this prevents its normal activity as well as its ability to replicate and spread.

"Virus clipping using meganucleases is a new therapeutic approach to tackle persistent viral infection which could have broad applications in medicine", said Pr. José Alain Sahel, Director of Institut de la Vision. "We are particularly interested in the potential of meganucleases in the prevention of recurrent infection during corneal transplantation and look forward to continuing our studies in this area."

"The results published in Molecular Therapy are very exciting since they open new fields of research for fighting HSV recurrent infections, a major cause of both acquired and severe loss of vision", added Dr. Marc Labetoulle, M.D., Ph.D. of CNRS.

About HSV-1 infection

HSV-1 infection is highly prevalent globally, with an estimated 70-90% of the adult population carrying the virus. The majority of seropositive individuals are unaware

¹ Meganuclease-mediated inhibition of HSV1 infection in cultured cells Stéphanie Grosse, Nicolas Huot, Charlotte Mahiet, Sylvain Arnould, Sébastien Barradeau, Diane Le Clerre, Isabelle Chion-Sotinel, Cécile Jacqmarcq, Benoît Chapellier, Ayla Ergani, Carole Desseaux, Frédéric Cédrone, Emmanuel Conseiller, Frédéric Pâques, Marc Labetoulle, Julianne Smith

that they are infected due to the asymptomatic nature of their infection. But once infected, the virus remains in the body for life. HSV-1 accounts for 20 to 40% of genital herpes infections and 95% of oral, neural or ocular herpes infections. It is a leading cause of blindness throughout the world and remains a major cause of corneal graft failure. A cure for herpes has yet to be developed.

About Cellectis

Cellectis is a pioneer in the field of genome engineering. The company designs and markets innovative tools -meganucleases. These molecular scissors enable targeted modifications to DNA, with applications in the research, biomanufacturing, agrobiotechnology and therapeutic sectors. To date, Cellectis has formed over 20 academic research partnerships and has established more than 50 agreements with pharmaceutical laboratories, seed producers and biotech companies across the world. The company holds exclusive rights to a portfolio of over 260 patents granted or pending.

Since 2007, Cellectis has been listed on the NYSE-Euronext Alternext market (code: ALCLS) in Paris and has secured over €70 million in funding since inception.

More information at www.cellectis.com



About Cellectis therapeutics

Established in 2008 as Cellectis genome surgery, Cellectis therapeutics is dedicated to the development of innovative therapeutic approaches using meganucleases to treat genetic diseases, cancers and persistent viral infections. Cellectis therapeutics seeks to treat patients suffering from serious diseases resistant to conventional treatment. Cellectis therapeutics is a fully owned subsidiary of Cellectis.

Disclaimer

This press release and the information contained herein do not constitute an offer to sell or subscribe, or a solicitation of an offer to buy or subscribe, for shares in Cellectis in any country. This press release contains forward-looking statements that relate to the Company's objectives. Such forward-looking statements are based on the current expectations and assumptions of the Company's management only and involve risk and uncertainties. Potential risks and uncertainties include, without limitation, whether the Company will be successful in implementing its strategies, whether there will be continued growth in the relevant market and demand for the Company's products, new products or technological developments introduced by competitors, and risks associated with managing growth. Unfavorable developments in connection with these and other risks and uncertainties described, in particular, in the Company's prospectus prepared in connection with its IPO and on which the French Autorité des marchés financiers ("AMF") granted its visa no. 07-023 on January 22, 2007, could cause the Company to fail to achieve the objectives expressed by the forward-looking statements above.

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