

PRESS RELEASE

Cellectis publishes results paving the way for new therapeutic approaches against cancer and genetic diseases

The scientific journal JBC publishes a first study on TALENs^{™1}, the highpotential, therapeutic and biotechnological DNA scissors

Paris, France, October 2nd, 2012 - Cellectis (Alternext: ALCLS), the French genome engineering specialist, announces in the *Journal of Biological Chemistry*, one of the most respected scientific journals in the world, the publication of a new approach regarding the targeted modification of DNA². The manuscript unmasks novel perspectives and broadens the scope of TALENs[™] technology to new therapeutic approaches to fight against cancer and genetic diseases. Until now, TALENs[™], the molecular scissors created by Cellectis Group, were only able to target certain parts of the genome. A team of the Group's researchers, led by Julien Valton and Philippe Duchateau, was able to overcome this constraint, opening the way to a wider range of applications, especially in the therapeutic field.

This study, the first to be published on TALENsTM, was awarded by the selection committee of the *JBC* as "Paper of the Week".

Since their identification in 2009, "TALEs" have quickly emerged as the new generation of DNA-binding domain with programmable specificity and have been successfully used to generate the molecular scissors known as TALENs[™]. However, their sensitivity to methylation, a ubiquitous modification of DNA, represents a major bottleneck for their widespread utilization in the genome engineering and therapeutic fields. Using a combination of biochemical, structural and cellular approaches, the R&D department of Cellectis was able to identify the basis of such sensitivity and more importantly, to propose an efficient and universal method to overcome it.

"These results are proof of the scientific creativity and quality of our research teams, as well as the power of our genome engineering tools. This new publication strengthens the relevance of our investment in TALEs technology, and confirms our strategy within the therapeutic field" declared André Choulika, Chief Executive Officer of Cellectis Group.

¹ Cellectis bioresearch, subsidiary of Cellectis Group, now offers TALEN[™] CpG[™] that enables specific binding of methylated DNA Press release | Cellectis



2) Overcoming TALE DNA Binding Domain Sensitivity to Cytosine Methylation Julien Valton, Aurelie Dupuy, Fayza Daboussi, Severine Thomas, Alan Marechal, Rachel Macmaster, Kevin Melliand, Alexandre Juillerat and Philippe Duchateau *J. Biol. Chem. jbc.C112.408864. First Published on September 26, 2012, doi:10.1074/jbc.C112.408864*

About Cellectis

Founded in France in 1999, the Cellectis Group is based on a highly specific DNA engineering technology. Its application sectors are human health, agriculture and bio-energies. Co-created by André Choulika, its Chief Executive Officer, Cellectis is today one of the world leading companies in the field of genome engineering. The Group has a workforce of 230 employees working on 5 sites worldwide: Paris & Evry in France, Gothenburg in Sweden, St Paul (Minnesota) & Cambridge (Massachusetts) in the United States. Cellectis achieved in 2011 €16M revenues and has signed more than 80 industrial agreements with pharmaceutical laboratories, agrochemical and biotechnology companies since its inception. AFM, Dupont, BASF, Bayer, Total, Limagrain, Novo Nordisk... are some of the Group's clients and partners.

Since 2007, Cellectis has been listed on NYSE-Euronext Alternext market (code: ALCLS) in Paris.

For more information, visit our website: www.cellectis.com.

About the Journal of Biological Chemistry

Building on over 100 years of research, the Journal of Biological Chemistry continues to provide essential research for an international audience and a standard of excellence in the field of biochemistry.

The JBC publishes papers based on original research that are judged to make a novel and important contribution to understanding the molecular and cellular basis of biological processes. The Papers of the Week highlight what JBC considers to be the best papers received for publication in the JBC. They are selected by our Associate Editors and Editorial Board Members and represent the top 2% of papers reviewed in terms of significance and overall importance.

Julien Valton, PhD, Project Manager

After obtaining his PhD in 2005 at CEA-Grenoble, Julien Valton undertook post-doctoral studies within the Pharmacology Department at Yale's University of Medicine in the USA. He joined the Cellectis R&D team in 2010, as project manager.

Philippe Duchateau, PhD, Chief Scientific Officer

With a PhD in science, Philippe Duchateau joined Cellectis in 2001 after nine years with the University of California's Cardiovascular Research Institute (San Francisco, USA). Since 2004, he was in charge of Cellectis' research department. He took his functions ad Chief Scientific Officer in January 2012.

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