

# Press Release

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## THE INDUSTRIAL ADVANTAGES OF DEINOVE'S *DEINOCOCCUS* HIGHLIGHTED BY THE AMERICAN MAGAZINE *JOURNAL OF APPLIED MICROBIOLOGY*

- Deinove's first publication in an international scientific magazine. Strong patent protection, including in the United States, allows Deinove to put forward its *Deinococcus*
- Published by 'The Society for Applied Microbiology' (SfAM) and edited by the U.S. publisher 'John Wiley & Sons, Inc. ', JAM is one of the two major magazines dealing with Industrial Biotechnology.
- The journal selected the paper describing the genus *Deinococcus* as a genuine innovative option in the bio-based chemical industry.

Montpellier, April 14, 2015 - DEINOVE (Alternext Paris: ALDEI), a biotech company developing innovative processes for producing biofuels and bio-based chemicals by using *Deinococcus* bacteria as host strains, today announces the publication of a paper titled "*Deinococcus as new chassis for industrial biotechnology: biology, physiology and tools*" in the *Journal of Applied Microbiology* (JAM). <http://onlinelibrary.wiley.com/doi/10.1111/jam.12808/abstract>

Reviewed and approved by independent experts, this article from the DEINOVE team<sup>1</sup>, led by Dr. Jean-Paul Leonetti, summarises the benefits of *Deinococcus* in bio-industrial applications:

- Strength and excellent resistance to a wide range of damage caused by ionizing radiation, desiccation, UV radiation and oxidizing agents. For example, *Deinococcus* can survive 6 weeks of desiccation, while the viability of *Escherichia coli* is reduced one million-fold after only one week. This characteristic is essential for the implementation of the industrial process, which starts with a culture of the strain stored in a lyophilized form (a "starter");
- Interspecies genome diversity and high plasticity, offering enormous genetic engineering potential;
- Ability to degrade biomass and to assimilate the various types of sugars found in lignocellulosic biomass;
- A unique metabolism<sup>2</sup> that provides access to new metabolic pathways.

The article also highlights the genetic engineering platform developed by DEINOVE.

"Our goal in this article was to summarise our understanding of *Deinococcus* as a bio-industrial chassis and the strides made by our teams since 2006", states Jean-Paul Leonetti, VP of R&D at DEINOVE. "We are very proud that the *Journal of Applied Microbiology* has chosen to publish our work, because it is one of the reference journals in our sector of the industry."

*Deinococcus* is a little-explored bacterial genus (less than 1,000 publications on *Deinococcus* vs. 100,000 on *Escherichia coli* and 300,000 on *Saccharomyces cerevisiae*) which is now emerging as a valid competitor to the commonly used chassis.

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<sup>1</sup> Esther Gerber, Rémi Bernard, Sandra Castang, Nicolas Chabot, Fabien Coze, Assia Dreux-Zigha, Elena Hauser, Patrick Hivin, Pascale Joseph, Clarine Lazzarelli, Guillaume Letellier, Jérémy Olive, Jean-Paul Leonetti

<sup>2</sup> Preferred use of the pentose phosphate pathway in aerobic conditions, generating NADPH production useful to other specific metabolic pathways (synthesis of organic acids, vitamins...)

Interestingly, *Deinococcus* provides both good resistance to bacteriophage infection and flexibility for synthetic biology, while expressing a significant level of enzymes and co-producing high-value carotenoids.

*“Deinove is in the position to jolt the market with a new generation of fermentation hosts that naturally offer significant and unique CAPEX and OPEX savings, and, in addition, operate at a higher temperature, which industrialists have been looking for to minimize costs”, reports Nagib Ward, DEINOVE’s Executive VP. “We are also unique in that Deinove leverages a hybrid-revenue model, with the aim to generate revenues coming both from the fermentation product and post-fermentation carotenoid (by-product) extractions. This is truly innovative, and an attractive financial proposition for any industrialist.”*

*“While moving to market swiftly remains a primary goal, paying particular attention to the discoveries along the way is very important in order to exploit the best opportunities and address valuable market needs. The unexpected technical discoveries made in the last 9 months are most exciting”, adds Philippe Pouletty, DEINOVE’s Chairman.*

## About the Society for Applied Microbiology (SfAM)

SfAM is the oldest microbiology society in the UK, serving microbiologists around the world. As the voice of applied microbiology, SfAM works to advance, for the benefit of the public, the science of microbiology in its application to the environment, human and animal health, agriculture, and industry. It works in collaboration with other organizations to ensure evidence based policy making and, in partnership with Wiley-Blackwell, publishes five internationally acclaimed journals. Value for money and a modern, innovative and progressive outlook are the Society's core principles. A friendly society, SfAM values integrity, honesty, and respect, and seeks to promote excellence and professionalism and to inspire the next generation of microbiologists.

*More information at [www.sfam.org.uk](http://www.sfam.org.uk)*

## About DEINOVE

DEINOVE (Alternext Paris: ALDEI) is ushering in a new era of green chemistry by designing and developing new standards of production based on bacteria of untapped potential: the Deinococci. Taking advantage of the bacteria's unique genetic properties and unusual robustness, DEINOVE optimizes natural fermentation and metabolic capabilities of these bacterial "micro-factories" to produce high value-added products from non-food biomass. The Company's primary markets are 2nd-generation biofuels (DEINOL) and bio-based chemicals (DEINOCHEM). On these markets, the Company offers its technology to industrial partners globally.

Listed on NYSE Alternext since April 2010, DEINOVE was founded by Dr. Philippe Pouletty, General Partner of TRUFFLE CAPITAL, and Pr. Miroslav Radman, of the Faculty of Medicine of Paris Descartes University. The company employs over 40 people in its new offices and laboratories located in Montpellier, France.

*More information at [www.deinove.com](http://www.deinove.com)*

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