

## DEINOVE AT THE CUTTING EDGE OF STRAIN CONSTRUCTION TECHNOLOGIES

- DEINOVE has taken part in the development of a personalized version of CAD4Bio software which enables to quickly construct customized *Deinococcus* strains with more reliable design.
- DEINOVE now offers this unique, automated platform to each potential partner and customer so as to be able to produce the ideal *Deinococcus* for each production process.

**Montpellier, 16 June 2014** – DEINOVE (Alternext Paris: ALDEI), a cleantech company that designs and develops a new generation of industrial processes based on the use of *Deinococcus* bacteria, has announced that its automated genetic engineering platform is now up and running. It uses pioneering computer-aided design software developed by CAD4Bio, a company specialized in software solutions for biotechnology companies, jointly with DEINOVE.



This software speeds up and streamlines the assembly of genetic building blocks that are of interest before transferring them to a host strain. It reduces human interventions and standardizes them, providing a cloning plan that can then be executed by a high-speed robot. This genetic engineering operation is used to optimize a strain's genome so that it will efficiently produce various molecules of industrial interest.

CAD4Bio software can also be interfaced with Genostar Pathway Browser software, which gathers all DEINOVE's genomic and transcriptomic data (genetic building blocks).

These genetic building blocks may be DNA sequences, genes coding for a key enzyme, or regulatory elements (promoters, attenuators, etc.). They are used to add, remove or modulate the functions of *Deinococcus* bacteria, whose complete genome is known. Depending on the function that will be assigned to the host strain, these building blocks are selected and imported into the CAD4Bio software which helps the DEINOVE researchers to design the host strain's genome, integrating the key genes. The software then calculates the sequences needed to amplify the building blocks and assemble them. This operating procedure, which give rise to a detailed cloning plan, are sent to the robot for execution. The robot in the cleanroom take over to amplify the genetic material using PCR (Polymerase Chain Reaction), to assemble the different genes and to insert them into the selected *Deinococcus* host strain.

*"This automated technique enables us to multiply genetic variants so we can select the strain with the best production capacity for the desired compound more quickly. Genetic engineering is at the heart of our work and its automation is fundamental to speed up our projects. Since its inception, DEINOVE has developed a set of proprietary tools and technologies specific to its microorganisms. These developments make it possible to modify Deinococcus as effectively as conventional microorganisms. The CAD4Bio software takes us one step further by automating strain design and construction."* said Jean-Paul Leonetti, Director of R&D at DEINOVE.

*“With this software, and more generally with the setting up of our automated genetic engineering platform, our R&D capacities are being reinforced in terms of quality, traceability and speed. Our research team can therefore spend more time on creative, high value added operations and the risk of human error is drastically reduced for precise but highly repetitive genetic assembly operations. It saves us precious time and money,”* added Emmanuel Petiot, CEO of DEINOVE. *“We are clearly at the cutting edge of genetic and metabolic engineering technologies. It is a major asset for our customers and partners, for whom it is a guarantee of quality and productivity.”*

For further information on DEINOVE’s new automated strain construction platform, watch a video demonstration: <http://www.deinove.com/en/news/all-press-releases/cad4bio>

## 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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