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Insilico's alternatives to animal testing

(Stuttgart) – Insilico Biotechnology is partner in several EU research projects aimed at developing testing methods for cosmetic substances without using animals. Computer-based models and simulations will be implemented to support and advance the development of cell and tissue cultures which produce reliable results even for long-term applications.

This is a giant task incurring huge financial investments. Together, the European Cosmetic Industry and the European Commission are investing approx. 50 million EUR to find alternatives to animal testing. Time is running short because a marketing ban on all cosmetic products and ingredients involving animal testing will come into effect in the EU in 2013.

The initiative comprises a total of six research projects. One called NOTOX is worth around ten million EUR and another entitled COSMOS is being financed with almost seven million EUR. Insilico Biotechnology is partner in both and will receive approx. one million EUR to finance its project work in the next five years.

Generally speaking, the main aim is to develop *in vitro/in silico* models for testing tolerance to cosmetic substances without using animals. Although testing methods based on cell and tissue cultures have been in use for some time, researchers have not yet been able to avoid animal testing completely especially when it comes to long-term tests where substances are applied repeatedly. Now, Insilico Biotechnology is helping to close the gap from »*in vitro*« to »*in silico*«. »Our large-scale simulations, which focus mainly on the metabolism of liver cells in this particular case, are designed to replace animal testing in long-term experiments. In the long run, they can even help reduce laboratory work with cell and tissue cultures«, explains Klaus Mauch from Insilico's Board of Directors.

In the NOTOX project, Insilico Biotechnology will use its systems biology platform to develop a new computer model of the metabolism of mammals including the signal and regulatory mechanisms. It will be optimized to simulate the effects of dose-dependent substances in several steps from molecule to tissue levels. Here, Insilico Biotechnology will cooperate closely with HLRS, the High Performance Computing Center Stuttgart, to work with innovative methods for high-performance grid computing. At the same time, liver cell and tissue cultures will be developed on the experimental project platform and tested for suitability for toxicity analyses. Laboratory and computer methods will be linked to develop a safe and easy-to-handle testing method which will render animal testing superfluous.

The COSMOS project will also benefit from Insilico Biotechnology's modeling and simulation know-how. The aim of this project is to develop a new type of software, based on experience and results from both animal experiments and new alternative methods, in order to obtain computer-based predictions on the safety of cosmetic substances in long-term use. State institutions from the USA are also taking part in this project with European partners e.g. the Food and Drug Administration (FDA) is providing extensive data so that a comprehensive data bank for toxicity can be built up to the advantage of all involved.

Press release



Insilico Biotechnology designs and optimises biotechnological processes for the chemical and pharmaceutical industries. Successful in business since 2001, Insilico has internationally renowned expertise and a unique technology platform for connecting cell model libraries with simulation processes. Insilico analyses the latest biotech data and integrates it in genome-wide network models. With its high-performance computing techniques, Insilico develops new improved solutions for manufacturing biochemicals and biopharmaceuticals and achieves considerable cuts in the time needed for the development of bioprocesses. Insilico is a privately-owned company, located in Stuttgart, Germany.

Contact:

Insilico Biotechnology AG
Dr. Heike Lehmann | Public Relations
T +49 711 460 594-18
F +49 711 460 594-10
heike.lehmann@insilico-biotechnology.com
www.insilico-biotechnology.com

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