

German Company Develops Groundbreaking Alternative to Stem Cell Therapy

Blasticon has at its disposal a patented technology based on which monocytes (mature white blood cells) from blood extracted from veins can be turned into cells with programmable properties comparable to those of stem cells and differentiated into different functional cells for diverse applications in diagnostics and therapy.

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In mid-March the German Bundestag (Lower House) is due to vote on an amendment to the German Stem Cell Act. The opposing poles in the debate on embryonic stem cell research could not be further apart: its proponents are calling for the complete liberalisation of stem cell research, while its critics are in favour of a general ban on the use of human stem cells, which are produced from embryos. While the Bundestag debates on a new regulation, Blasticon Biotechnologische Forschung GmbH has made a breakthrough in cell biology:

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Cellular quick-change artists in the fight against widespread diseases

"We work with mononuclear cells, which can simply be extracted from blood," says Prof. Dr. med. Fred Fändrich, Director of the Clinic for General Surgery and Thoracic Surgery at the University Clinic of Schleswig-Holstein, Kiel, and founder of the company. "In the second step of our patented procedure we can 'reprogram' these programmable cells into the desired target cells, for example liver or muscle cells or cells in pancreatic islets of Langerhans." The therapeutic possibilities lie in replacing defective or missing cells (regenerative medicine) or producing cells that regulate the immune system. A significant advancement in the treatment of autoimmune diseases or for transplant medicine.

The "reprogrammed" cells can be used both as diagnostic agents or for therapeutic purposes. Inflammatory bowel diseases (Morbus Crohn, Colitis ulcerosa), diabetes, rheumatism, cardiac infarction, liver diseases and kidney and liver transplants, among others, are among the main therapeutic areas. Blasticon's therapeutic agents are for the most part in advanced stages of preclinical or clinical phases of development. In most cases, the medical fields of application described necessitate costly lifelong treatment. Blasticon's reprogrammed cells make it possible to attack illnesses at their origin and to prevent long duration of treatment. A further possible positive effect of the technologies is significant cost-reduction in the health system.

Products which are ready for application and soon to be introduced onto the market

The diagnostic application of the in vitro acute toxicity test "NeoHeps" can be introduced onto the market as soon as NeoHelps has been successfully validated by the European Union (EU). The REACH programme, a new EU chemical regulation that came into force on 1 June 2007 is of particular importance here; it will in future oblige all manufacturers, importers and users of chemicals

to evaluate their substances as being safe. This presents a great challenge to many industries, whether they produce shampoos, kitchen utensils, computers, televisions, furniture or clothing - owing to the implementation of REACH, over 30,000 known chemicals are to be retested for their toxic safety. New chemical entities must also be tested with the REACH test regime. According to estimates, around 3,500 tests a year will be necessary.

Up to now, Blasticon's "NeoHeps" test system has passed all necessary tests within the EU test framework and has therefore been able to secure itself a clear market lead. In addition, "NeoHeps" could be of considerable benefit to the pharmaceutical industry, for example in examining the effectiveness and undesirable side effects of medicines. The advantages are less animal testing, unlimited availability of the required cells and cost-reduction in the area of drug development.

Prof. Dr. med Fändrich comments on the current political debate: "Personally, I do not think much of the use of embryonic cells for clinical application. Pure research and clinical research should be kept separate from one another. Embryonic stem cells are necessary so that we can gain a better understanding of the programmability of cells."

(Source: PRNewswire)

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About Blasticon Biotechnologische Forschung GmbH

Blasticon is a biotechnology company that is active in the fields of cellular medicine and in vitro diagnostics. Blasticon has at its disposal a patented technology that enables it to turn monocytes (mature white blood cells) from extracted blood into PCMO (programmable cells of monocytic origin = stem-cell-like human cells) and to differentiate them into different functional cells for diverse applications in diagnostics and therapy. The company was founded in 2002.

Contact:

PRint Agentur für Öffentlichkeitsarbeit GmbH

Katja Schmidt

Telephone: +49-89-66532-1280

Telefax: +49-89-66532-1115

Email: katja.schmidt@heye.de