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German Helmholtz Zentrum Munich reports on Gene Transfer Optimization in 'Biomaterials' in cooperation with SIRION Biotech

Systematic improvement of lentivirus transduction protocols by antibody fragments fused to VSV-G as envelope glycoprotein

Neuherberg near Munich, Controlled gene transfer into different target cells by means of specific surface markers is significantly more efficient than gene transfer without this assistance. Gene therapies using lentiviral transfer of genetic information can thus be optimized. These findings were reported by scientists of Helmholtz Zentrum München in the 'Biomaterials' journal.

Lentiviruses, which belong to the family of retroviruses, are used as vectors to exchange genetic material in cells and can be used to replace a defective gene as defined by gene therapy. Increasing the efficiency of such a treatment poses a major medical challenge: the virus should specifically track the target cells, but the number of virus used should be as low as possible.

A research team led by Dr. Ines Höfig and Dr. Natasa Anastasov from the Institute of Radiation Biology (ISB) at Helmholtz Zentrum München in cooperation with SIRION Biotech GmbH in Munich and the Fraunhofer Institute in Aachen has now developed an adjuvant which enhances the effect of the virus transduction. Thus the transfer into the target cells is optimized without additional toxicity.

About Helmholtz Zentrum Munich

Helmholtz Zentrum München is the German Research Center for Environmental Health. It investigates important common diseases which develop from the interaction of lifestyle, environmental factors and personal genetic background, focusing particularly on diabetes mellitus and chronic lung diseases.

Helmholtz Zentrum München is a research institution of the Federal Republic of Germany and the Free State of Bavaria. It is a member of the Helmholtz Association of German Research Centers.

About SIRION Biotech www.SIRION-Biotech.com

SIRION Biotech started in Munich in 2007 with the idea of enabling novel cell models closer to reality than ever before. This required the assembly of an all-encompassing, novel viral vector platform. Both, designing de novo viral vectors and the subsequent creation of custom cell models will pave the way for superior compound development in the life sciences. SIRION's technologies have been validated in over 300 single projects with more than 100 academic and industrial partners. As a result, cell models for drug discovery and development have become highly reliable, as have the use of new viral vectors in gene therapy and vaccine studies.

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