

## PRESS INFORMATION

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### **Fraunhofer Institute for Cell Therapy and Immunology and Immunic GmbH carry out joint research on new drugs for treating autoimmune diseases**

**Since January 2017, researchers from Immunic GmbH have been working with scientists at the Department of Drug Design and Target Validation of the Fraunhofer IZI in Halle (Saale) on developing new drugs. The aim is the preclinical development of one or several active candidate ingredients for treating chronically inflammatory and autoimmune diseases.**

The human immune system is one of nature's "silver bullets". It recognizes and removes harmful pathogens and poisons and protects the body and organs. In the process, a highly complex system of cells, chemical neurotransmitters and receptors organizes the distinction between "good and evil". In the case of autoimmune diseases, this interaction is disrupted. The immune system interprets the body's own structures as dangers or hazards and triggers inflammatory processes. The ROR $\gamma$ t receptor (*retinoic acid receptor-related orphan receptor gamma*) plays a central role in developing such misdirected inflammations. If this receptor is blocked, this chokes off the production of important pro-inflammatory chemical neurotransmitters.

The company Immunic GmbH ([www.immunic.de](http://www.immunic.de)) has a series of compounds that can selectively block the ROR $\gamma$ t receptor. Their therapeutic potential is now to be characterized in greater detail as part of a cooperative project with the Fraunhofer Institute. In this project, various experiments will establish whether there are any potential active ingredients among the compounds that demonstrate a corresponding effectiveness, stability and safety. The Halle-based researchers will contribute their expertise in developing small-molecule drugs. Initially, a suitable and optimized production process is to be developed for compounds so that these can be produced in constant quality and used for biological investigations. Cell and animal models will then be used to investigate effectiveness and the risk of side-effects.

As an initial indication, the researchers will look at psoriasis. This autoimmune disease, commonly known as shingles, leads to inflammations of the skin, sometimes including the joints, ligaments, blood vessels and the heart as well. It can also lead to diabetes and strokes. "Within the next two years, our objective is to check one or several active candidate ingredients as far as possible so that their effectiveness in patients can then be investigated in clinical studies," said Dr. Mirko Buchholz, project manager at the Fraunhofer IZI, summing up the project.

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**Editor**

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**FRAUNHOFER INSTITUTE FOR CELL THERAPY AND IMMUNOLOGY IZI**

**The Fraunhofer Institute for Cell Therapy and Immunology IZI**

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The Fraunhofer Institute for Cell Therapy and Immunology IZI investigates and develops solutions to specific problems at the interfaces of medicine, life sciences and engineering. One of the institute's main tasks is to conduct contract research for companies, hospitals, diagnostic laboratories and research institutes operating in the field of biotechnology, pharmaceuticals and medical engineering. The Fraunhofer IZI develops, optimizes and validates methods, materials and products for the business units Cell and Gene Therapy, Drugs, Diagnostics and Biosystems Technology. Its areas of competence lie in cell biology, immunology, drug biochemistry, biomarker, bioanalytics and bioproduction as well as process development and automation. In these areas, research specifically focusses on the indications oncology, neuropathology, autoimmune and inflammatory diseases as well as infectious diseases and regenerative medicine.

The **Fraunhofer-Gesellschaft** is the leading organization for applied research in Europe. Its research activities are conducted by 67 Fraunhofer Institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of 24,000, who work with an annual research budget totaling more than 2.1 billion euros. Of this sum, more than 1.8 billion euros is generated through contract research. More than 70 percent of the Fraunhofer-Gesellschaft's contract research revenue is derived from contracts with industry and from publicly financed research projects. Branches in the Americas and Asia serve to promote international cooperation.

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