

PRESS INFORMATION

PRESS INFORMATIONFebruary 5, 2018 || page 1 | 3

Biomarkers to predict vascular reocclusion following surgery

The Molecular Drug Biochemistry and Therapy Development Project Group at Fraunhofer Institute for Cell Therapy and Immunology IZI has been granted almost €400,000 in funding from the German Federal State of Saxony-Anhalt for the validation of a new biomarker expected to indicate the success of vascular surgery interventions and increase patient safety in future.

Arteriosclerotic changes in the body's vessels are the primary cause of poor tissue perfusion. Depending on the perfusion area in question, this can lead to heart attacks and strokes. If, however, the muscles are not supplied with enough oxygen, many patients also experience impaired mobility, for instance due to pain in their legs. In advanced stages, the narrowed segment tends to either be circumvented by means of a bypass or the vessel is enlarged in the catheter laboratory using a balloon. For a high number of patients, however, this intervention is immediately followed by the treated vessel occluding once again, which in turn results in symptoms reemerging. An easily accessible biomarker capable of indicating respective negative processes at an early stage is therefore of great medical interest. The goal would be to more closely examine relevant high-risk patients with a view to intervening earlier and thus improving therapy results.

Researchers at Fraunhofer IZI have already identified a promising biomarker in previous studies – an enzyme (glutaminy cyclase) whose activity is able to give a prognosis as to the healing process of the treated blood vessel. But these previous studies were initially only based on a small patient population. Thanks to the state funding, this biomarker can now be validated by mid-2020 using a larger group of patients, graded according to concomitant diseases emerging in parallel such as type II diabetes mellitus or hyperlipidemia.

The Clinic for Vascular Surgery at the St. Elisabeth and St. Barbara Hospital in Halle (Saale), Germany, is an important partner here. Blood samples will be taken from patients at regular intervals before the operation and up to one year afterwards. These samples will then be sent to the Fraunhofer Institute for examination, as part of which a biochemical analysis of enzyme activity will be conducted in what will, to begin with, still be a relatively complex laboratory process. At the same time, however, the researchers in Halle (Saale) will be working to develop a simplified immunological test based on the amount of enzymes. A user-friendly and cost-efficient test would contribute to increased patient safety and make for a more targeted therapy for high-risk patients.

Editor

Jens Augustin | Fraunhofer Institute for Cell Therapy and Immunology IZI | Phone +49 341 35536-9320 | Perlickstr. 1 | 04103 Leipzig | Germany | www.izi.fraunhofer.de | jens.augustin@izi.fraunhofer.de

FRAUNHOFER INSTITUTE FOR CELL THERAPY AND IMMUNOLOGY IZI

Valued at a total of almost 400,000 euros, the project is being funded through the German Federal State of Saxony-Anhalt with funds from the European Regional Development Fund (ERDF).

PRESS INFORMATION

February 5, 2018 || page 2 | 3



SACHSEN-ANHALT



EUROPÄISCHE UNION

EFRE

Europäischer Fonds für
regionale Entwicklung

FRAUNHOFER INSTITUTE FOR CELL THERAPY AND IMMUNOLOGY IZI

The Fraunhofer Institute for Cell Therapy and Immunology IZI

PRESS INFORMATION

February 5, 2018 || page 3 | 3



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 69 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of 24,500, who work with an annual research budget totaling 2.1 billion euros. Of this sum, 1.9 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. International collaborations with excellent research partners and innovative companies around the world ensure direct access to regions of the greatest importance to present and future scientific progress and economic development.

Further contact

Dr. Holger Cynis | Telephon +49 345 131428-00 | holger.cynis@izi.fraunhofer.de | Fraunhofer Institute for Cell Therapy and Immunology IZI | Department of Drug Design and Target Validation Halle (Saale), Germany | www.izi.fraunhofer.de