

BMBF* funds a research project coordinated by Gambro to investigate Chronic Inflammation in ESRD patients

A research consortium headed by Gambro Dialysatoren GmbH in Hechingen (Germany), consisting of researchers from different disciplines, has received a major project grant from the German Federal Ministry of Education and Research (BMBF)* within the program of “Funktionale Einwegsysteme für die Medizin und Bioproduktion - BioMatVital: BioDisposables“**. The project aims to investigate a new generation of dialysis membranes to improve the treatment of chronic inflammation in End Stage Renal Disease (ESRD) patients. The grant from BMBF provides 2.1 million euros in funding over 3 years started September 2011.

One-third of ESRD patients suffer from chronic inflammation. The currently used technologies for renal replacement therapies are not able to mimic completely the performance of the native kidney. As a direct consequence, many dialysis patients have an increased level of inflammation, which often leads to secondary immunodeficiency and to progression of cardiovascular diseases and finally to increased rates of death. To address this important issue, the consortium led by Gambro is investigating a new generation of highly selective dialysis membranes, which are intended to effectively remove inflammatory substances from the blood. At the same time, these membranes are designed to provide an effective barrier for functional proteins. The consortium is examining innovative approaches to control pore patterns. The effects of this novel membrane type in the treatment of chronic inflammation will be studied by lab tests and by first clinical trials.

“We have put together an excellent consortium which brings together experts on material and membrane science, protein diagnostics, kidney diseases and renal therapy research,” says Dr Bernd Krause, Director of Gambro’s Research and Development Center in Hechingen (Germany).

Project partners

In addition to Gambro (contact number: 13N11796), the consortium partners include the NMI Technologie Transfer GmbH (contact number: 13N11797), the Martin-Luther-University Halle-Wittenberg (contact number: 13N11798) and the Charité-Virchow Clinic Berlin (contact number: 13N11799). The NMI Technologie Transfer GmbH, a small life sciences company, specializes in protein profiling using protein micro array technologies. Two renowned nephrologists, Professor Matthias Girndt, Director of the Clinic for Internal Medicine II at the Martin-Luther-University Halle-Wittenberg, and Professor Ralf Schindler, acting head of the Division of Nephrology and Internal Intensive Care Medicine of the Charité-Virchow Clinic in Berlin, bring to the project a profound clinical expertise in the treatment of ESRD patients.

Every day, Gambro’s products save, sustain and improve the lives of patients worldwide through innovative products and therapies for Kidney and Liver dialysis, Myeloma Kidney Therapy, and other extracorporeal therapies for Chronic and Acute patients. Founded in 1964, Gambro today has 7 500 employees, production facilities in 9 countries, and sales in more than 100 countries.

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Professor Marcus Glomb, the head of the Institute for Food Chemistry of the Martin-Luther-Universität Halle-Wittenberg, complements the group with his expertise on glycosylated plasma proteins, which accumulate in dialysis patients.

Dr Krause continues: “This is an exciting project at the forefront of dialysis science and we are extremely pleased that the Federal Ministry of Education and Research Germany has decided to support this activity. Chronic inflammation is an unmet challenge for nephrologists all over the world which compromises the quality of life of our dialysis patients and generates significant costs for the treatment of associated complications. Our unique competence in material and membrane technology provides an ideal basis to address this challenge.”

“Many attempts at reducing chronic inflammation in dialysis patients have failed”, says Prof. Girndt. “This project may for the first time in years bring new hope to the very dissatisfying clinical condition that leads to disabling and early death in a large number of patients. The collaborative approach including expertise from both Universities and Industry, is extremely promising.”

****Functional Disposable Systems for Medicine and Bioproduction - BioMatVital:
BioDisposables**

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Consortium partners**Charité Berlin**

Almost 3,800 scientists and doctors at the Charité - Universitätsmedizin Berlin are working on developing new therapies and optimizing existing treatments. The exciting innovations to come out of research and development are of great interest to the general public.



Universitätsklinikum
Halle (Saale)

University Hospital Halle (Saale)

The Medical Faculty and its University Hospital are located in Halle (Saale). With a history spanning over 300 years, it is one of the oldest medical schools in Germany and Europe. Germany's first University Hospital was founded here. It was also here that the first medical doctor title was awarded to a woman, and where one of the world's largest anatomical collections was amassed. The first kidney transplants and open-heart surgeries in the former GDR were carried out in Halle.



MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Martin-Luther-University Halle-Wittenberg**Food Chemistry and Environmental Chemistry**

One aim of the university's research is the elucidation of the main chemical pathways of the non enzymatic browning reaction with a major focus on the resulting protein modifications and their impact for foods and *in vivo*. A second aim is directed towards the isolation of bioactive structures in foods using combined strategies of chromatography and bioactivity tests.

Research topics: Maillard Reactions in Foods and *in vivo*, Posttranslational Protein Modifications, Functional Food, Physiological Active Food Ingredients.

**NMI Technologietransfer GmbH (Reutlingen, Germany)**

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