Press release

BMBF PeTrA Project to make administration of biopharmaceuticals more tolerable for patients

- Started on July 1, 2011, to last for three years
- Evonik is in the management consortium of PeTrA
- Tablets and sprays are more convenient for patients

The goal of the interdisciplinary research project PeTrA*, which is sponsored by the German Ministry for Education and Research (BMBF), is supersede the need for injections for biopharmaceuticals used e.g. in cancer immunotherapy by developing spray and tablet formulations which include innovative biofunctional polymers. The project is designed to simplify the administration of biopharmaceuticals and to improve their bioavailability. PeTrA is managed by a consortium consisting of Evonik Industries AG, Merck KGaA, EMC microcollections GmbH, a high-tech company for peptide and peptidomimetics synthesis, the Helmholtz Center for Infection Research (HZI), and the Fraunhofer Institute for Interfacial Engineering and Biotechnology (IGB).

The project, which started on July 1, 2011, is scheduled to last for three years. Approximately half of the 6 million Euro budget is supported by the three industry partners. The PeTrA consortium also includes the Friedrich Schiller University in Jena, the Saarland University, the University of Nijmegen (Netherlands), the Bonn University Hospital, the Charité Hospital Berlin, the Kiel University, and the Würzburg University.

Biopharmaceuticals have been on the advance for years in modern drug therapy. They include peptides, proteins and antibodies, nucleic acids and blood components that represent a promising basis for new active principles and for cancer immunotherapy. Many of these highly successful drugs improve patient life quality and have enormous technological potential for the pharmaceutical industry.

Today, biopharmaceuticals are mostly administered by injection. Indeed, there is no efficient or broadly applicable system for administering them via the mouth (oral) or through the respiratory pathways (inhalation) because they are not easily absorbed by the mucous membranes of the gastrointestinal tract and respiration system, and tend to be degraded in the stomach before they can have an effect on the body. The PeTrA project aims at overcoming these obstacles by packaging highly sensitive

March 7, 2012

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biopharmaceuticals into nano- and micro-sized particles that transport the active ingredients through the mucous membranes and protect them from degradation in the stomach.

"Tablets and sprays are more convenient for patients, particularly in long-term therapies which can require continuous drug intake over weeks or months," says Dr. Rosario Lizio about the motivation of the research partners. Lizio, the PeTrA project coordinator, is also the head of the Discovery & Development department of Pharma Polymers, a product line of the Health Care Business Line of Evonik specialized in drug delivery systems.

"I am convinced that the breadth of expertise represented in the project provides an excellent basis for the development of novel drug delivery technologies for biopharmaceuticals." says Lizio. "The team composition combines leading competencies in the design of pharmaceutical functional polymers, formulation of drug release systems as well as innovative models to assess the in-vivo efficacy of these systems. I am delighted to be part of this venture and look forward to contributing Evonik's expertise in functional pharmaceutical polymer design and formulation" he adds.

*PeTrA stands for "Platform for efficient epithelial transport of pharmaceutical applications with innovative particular carrier systems" (Evonik-Funding Ref. No.: 13N11454) and is part of the BMBF grant project "Efficient drug transport in biological systems – BioMatVital: Biotransporters."

Company information

Evonik, the creative industrial group from Germany, is one of the world leaders in specialty chemicals. Its activities focus on the key megatrends health, nutrition, resource efficiency and globalization. In 2010 about 80 percent of the Group's chemicals sales came from activities where it ranks among the market leaders. Evonik benefits specifically from its innovative prowess and integrated technology platforms. Evonik is active in over 100 countries around the world. In fiscal 2010 more than 34,000 employees generated sales of around €13.3 billion and an operating profit (EBITDA) of about €2.4 billion.

Evonik Industries has been producing specialty chemical products in the Greater China region (Mainland China, Hong Kong, Taiwan, and Macao) since the

late1970's; with wide-ranging trading relations already in place prior to this in the region. The Group now has a total of 18 companies and 15 production sites in the Greater China region. Evonik regards Greater China as one of the driving forces of the global economy and we consequently endeavour to grow our business in the region.

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