

Launch of EU Research Project EXPERT: Towards Off-the-Shelf mRNA Nanomedicines

11 international partners work on a novel delivery system for mRNA therapeutics to treat cancer and heart failure

Utrecht, October 29, 2019 – The new EU research project EXPERT aims at developing a new off-the-shelf delivery system for RNA-based nanomedicines with a first clinical application in breast cancer and cardiovascular disease. In the long term, the platform technology could be used for improving therapeutic options for patients with several other diseases. The project will receive EUR 14.9 million funding from the European Union’s Horizon 2020 Framework Programme over the next five years.

With the first two fields of application in breast cancer and heart failure patients, the European research project EXPERT addresses two of the most pressing healthcare challenges in European society today. The 11 international partners from academia and industry collaborate to develop a platform-based delivery system for mRNA nanomedicine to tackle the bottlenecks that therapeutic mRNA application is currently facing. The complementary expertise of the partners spans the entire development track from nanoparticle design via Good Manufacturing Practice (GMP)-based production to clinical application.

As proof-of-concept, the partners work towards a first clinical study focusing on immunotherapy for metastatic triple-negative breast cancer. The specific mRNAs would instruct patients’ cells to produce proteins which activate immune cells and liberate tumour antigens. As a second field of application, EXPERT will investigate the use of mRNA for heart failure. Patients would receive a specific mRNA molecule helping to stimulate tissue regeneration in the heart without producing side effects elsewhere in the body.

Besides the production of the mRNA therapeutics, the project seeks to identify new pathways of delivering the medication to the targeted cells of activity through nanocarrier materials designed to protect the mRNA payload from being destroyed by the human body’s immune response.

“Our vision is to clinically develop mRNA therapeutics and to overcome the main obstacles mRNA-based therapy approaches are facing on their way to the market”, said Professor Raymond Schiffelers from Universitair Medisch Centrum Utrecht, Netherlands, who coordinates the project. “The EXPERT approach could make mRNAs available off-the-shelf enabling their use for more patients and different types of diseases.”

The EXPERT consortium comprises 11 international partners from The Netherlands, Belgium, Norway, Sweden, Spain, Hungary, Ireland, France, Germany, and Israel. On 24-25 October 2019, they all came together for the official project kick-off in Utrecht, Netherlands.

Project Key Facts

Title: EXPERT – Expanding Platforms for Efficacious mRNA Therapeutics

Start: 01 September 2019

Duration: 60 months

Budget: 14,931,337.50 €

Coordinator: Universitair Medisch Centrum Utrecht, The Netherlands

Project Partners

- AstraZeneca AB, Sweden
- CYBERnano, France
- eTheRNA Immunotherapies, Belgium
- Eurice - European Research and Project Office GmbH, Germany
- Fundacion CIDETEC, Spain
- Karolinska Institutet, Sweden
- Semmelweis University, Hungary
- SINTEF AS, Norway
- Tel Aviv University, Israel
- Trinity College Dublin, Ireland
- Universitair Medisch Centrum Utrecht, The Netherlands

EXPERT

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