

New EU Research Project ImmUniverse: Transforming Diagnosis and Therapy of Immune-Mediated Diseases

Transdisciplinary consortium to focus on common biomarkers in Ulcerative Colitis and Atopic Dermatitis

Milan, 24 February 2020 – By looking into the common disease mechanisms of Ulcerative Colitis and Atopic Dermatitis, the 26 European partners collaborating in the new research project ImmUniverse aim at improving diagnostic and therapeutic options for patients living with these conditions. Through molecular profiling techniques, the team will identify signatures of biomarkers and mechanistic principles which reveal information on disease severity and progression enabling personalised therapy decisions for each patient at the right time. The project will run for a period of five years with a total budget of EUR 31 million provided by the Innovative Medicines Initiative (IMI 2), a Joint Undertaking of the European Union and the European Federation of Pharmaceutical Industries and Associations (EFPIA). Of the total budget, 50% are contributed by the EFPIA partners and 50% by the EU.

Immune-mediated inflammatory diseases (IMIDs) are an increasing medical burden in industrialised countries worldwide. They are characterised by an enormous heterogeneity with regard to disease outcome and response to targeted therapies, which often cannot be adequately tailored to individual patients. Hence, an in-depth understanding of this heterogeneity and the biomarkers which predict disease control and therapy response over time are important prerequisites for future precision medicine strategies in IMIDs. The pathogenic components (“omics”) responsible for the disease outcome in each individual patient, i.e. environment, genes, gut microbiota or the immune system, are remarkably multifactorial, with thousands of constituents all interacting with and impacting on each other.

ImmUniverse has been formed as a European transdisciplinary consortium to tackle these unmet needs and pave the way towards a truly personalised disease understanding of two different IMIDs: Ulcerative Colitis and Atopic Dermatitis. Following a unique cross-disease approach, the multinational project will fill the gap and address the limitations of current studies by systematically comparing the complex interactions between recirculating immune cells and the respective tissue microenvironment. The novel, circulating biomarker assays are expected to

- improve diagnosis
- inform about disease severity and progression early in the clinical course, and
- enable treatment response and remission monitoring.

To this end, the ImmUniverse research team will employ state-of-the-art multi-omics profiling technologies, including single-cell RNA sequencing, metabolomics and advanced data management and bioinformatics pipelines.



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“Unlike previous studies in the field, we will specifically compare signatures from the same individual over time, capturing the full range of disease activity. We expect this approach to provide us with valuable insights into the interaction between the factors affecting disease progression and therapy response”, says Professor Silvio Danese, Professor of Gastroenterology at Humanitas University in Milan, Italy, and Scientific Coordinator of the project.

The project team comprises 16 academic partners, led by Humanitas University, five industrial project partners, co-led by GlaxoSmithKline (GSK) and Sanofi, as well as two small and medium-sized enterprises. This includes IMID-experienced clinicians and drug developers, basic immunologists, bioinformaticians as well as biotechnology and clinical development experts. Many of the partners have been involved in defining both European and international standards for interdisciplinary clinical care for IMIDs patients, with the intent to facilitate the transfer of high-quality clinical data and biomaterials into clinical research. Furthermore, the consortium is complemented by three European patient organisations to ensure efficient dialogue and a continuous focus on the actual needs of patients living with Ulcerative Colitis and Atopic Dermatitis.

ImmUniverse is funded by the Innovative Medicines Initiative 2 Joint Undertaking with in-kind contributions of the participating pharmaceutical companies. The project will officially kick off its activities with a first meeting in Milan, Italy, on 24-25 February 2020.

Project Key Facts

Full Name: ImmUniverse - Better control and treatment of immune-mediated diseases by exploring the universe of microenvironment imposed tissue signatures and their correlates in liquid biopsies

Start date: 01 January 2020

Duration: 60 months

Budget: 31.000.000,00 €

Coordinator: Humanitas University, Italy

Project Lead: GlaxoSmithKline Research & Development Limited, UK

Project Partners

Austria

AIT Austrian Institute of Technology GmbH
JOANNEUM RESEARCH Forschungsgesellschaft mbH

Belgium

European Federation of Allergy and Airways Diseases Patients' Associations
European Federation of Crohn's and Ulcerative Colitis Associations
Katholieke Universiteit Leuven
Vlaams Instituut voor Biotechnologie

Denmark

Aarhus Universitet
Aarhus Universitetshospital

France

Centre Hospitalier Régional Universitaire Nancy



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Christian Albrechts-Universität zu Kiel
EURICE - European Research and Project Office GmbH
Ludwig-Maximilians-Universität München
Sanofi-Aventis Deutschland GmbH

Italy

Humanitas University
Istituto Superiore de Sanità
Scuola Superiore di Studi Universitari e di Perfezionamento Sant'Anna

Luxembourg

European Patients Forum
Information Technology for Translational Medicine (ITTM) SA
Université du Luxembourg

Netherlands

Academisch Medisch Centrum Universiteit van Amsterdam
Radboud Universitair Medisch Centrum (Radboudumc) Nijmegen

Switzerland

Novartis Pharma AG

United Kingdom

Eli Lilly and Company Limited
GlaxoSmithKline Research & Development Limited
Pfizer Limited
University of Cambridge

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