

Predicting cardiovascular disease

Bloodomics project receives 9 million Euro

A consortium of 14 partners across Europe has received a grant of 9 million Euro from the European Commission in order to investigate and discover the genetic markers that will identify people who are at risk of clot formation and heart attacks.

The post-genomic research programme called Bloodomics will link researchers with expertise ranging from clinical to basic science. The grant will cover the next four years of research. To manage the project, the partners have set up the European Cardiovascular Genetics Foundation (ECGF).

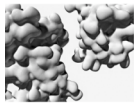
With about 600,000 patients diagnosed with myocardial infarction every year in Europe alone, blood clots in arteries cause more deaths than any other disease. Whilst risk factors of the disease such as smoking, diabetes, hypertension and obesity are known, it is widely accepted that cardiovascular disease also has a genetic component. The genes that contribute to the disease, however, are largely unknown.

“Early identification of individuals at risk has proven difficult in the past. With state-of-the-art tools and technologies at hand, the Bloodomics project aims to discover genetic markers that are associated with a higher than normal infarction risk”, explained Dr Willem Ouwehand, Reader at the University of Cambridge and initiator of the Bloodomics project.

The project has gathered together leading research groups from six countries to build a multi-disciplinary team to meet the challenge of improving cardiovascular healthcare. In addition to the clinical teams, the consortium consists of academic groups specialized in cell biology, haematopoiesis and proteomics, the National Blood Services of England and the Netherlands as well as Europe's premier genome centre.

“The Bloodomics project provides a unique opportunity to exploit the expertise gained during the Human Genome Project to benefit patients,” said Dr David Bentley, Head of Human Genetics at the Wellcome Trust Sanger Institute.

Included in the consortium are Domantis, a Cambridge antibody engineering company and Trium Analysis Online, a Munich based company developing informatics solutions. Both will make critical contributions to the project. Statistical expertise from Medical Research Council scientists will be essential for the complex process of data analysis.



Exploiting the merits of the post-genomic era, the Bloodomics project makes use of the completed human genome sequence and employs state-of-the-art high throughput platforms for genotyping, transcriptome, proteome and cell function analysis.

The research effort will initially be focused on platelets, building on the experience of the Universities of Cambridge, Leicester, Leuven, and Utrecht in this field. “We believe that platelets play a major role in clot formation and we want to understand how an individual’s genetic make-up controls the severity of this”, said Dr. Ouwehand.

The first step will be to identify the genes that contribute to platelet function. Later on, the function of the corresponding proteins will be determined and their role in the cellular networks traced. This comprehensive approach will provide new insights into the causes of heart disease and will eventually lead to the development of new drugs for prevention and treatment.

“We do have the power to contribute significantly in preventing one of the major diseases of modern society”, said Dr Ouwehand. “My vision is to improve future care of patients by understanding the role of platelets in disease and to unravel the unique interaction between environment and genes on platelet function.”

Notes to Editors:

1. Bloodomics Partners

Dr D Ardissino, University of Parma, Italy

Dr D Bentley, Wellcome Trust Sanger Institute, Hinxton, UK

Dr M Daumer, Trium Analysis Online, Munich, Germany

Prof H Deckmyn, University of Leuven, Belgium

Prof D Fitzgerald, University College Dublin, Ireland

Prof A Goodall, University of Leicester, UK

Dr E Gray, National Institute for Biological Standards and Control, Potters Bar, UK

Prof P de Groot, University of Utrecht, The Netherlands

Prof J Kastelein, Academic Medical Centre, Amsterdam, The Netherlands

Prof W März, University of Graz, Austria

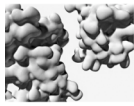
Dr W Ouwehand, University of Cambridge/National Blood Service, UK (Project Coordinator)

Dr E vd Schoot, Sanquin Blood Supply Foundation, Amsterdam, The Netherlands

Prof S Thompson, Medical Research Council, Cambridge, UK

Dr I Tomlinson, Domantis, Cambridge, UK

Dr B Winkelmann, Cardiology Group Frankfurt-Sachsenhausen, Germany



2. The project will be funded with a 9 Million Euro award from the 6th Framework Programme of the European Community. Final approval has just been received. 20 new positions in statistics, bioinformatics, genetics and cell biology have been created, 17 of which have been filled. More than 160 members of staff within the partners' institutes are already committed to research in cardiovascular disease.

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