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Press release

HOMAGE – Overcoming Heart Failure, an European challenge

The HOMAGE (Heart OMics in AGEing) project, coordinated by the French National Institute of Health and Medical Research (INSERM), has been awarded a grant by the European Commission for a 6 year period. The project aims to identify and validate specific biomarkers of heart failure in order to prevent the development of the disease affecting elderly population. 17 research groups from 10 countries will collaborate to investigate new ways of preventing heart failure. The project will use an innovative ‘omic-based’ approach which investigating simultaneously a huge amount of genes, proteins and metabolites. The 17 partners will meet at Nancy on February 22nd for the kick off meeting of HOMAGE.

Professor Faiez Zannad, Head of the Centre d’Investigation Clinique Pierre Drouin Inserm U9501 and Inserm Unit 1116 based in Nancy, is the project coordinator. The 12 million euros grant of the European Commission will be dedicated to the HOMAGE consortium for research on heart failure, a serious illness altering myocardial activity which affects more than 6.5 million persons in Europe. Indeed, the prevalence of heart failure is increasing worldwide due to an ageing population as well as a rising trend of risk factors for heart disease such as diabetes, obesity and hypertension. Heart failure is a major cause of mortality and morbidity in the world and remains the most frequent cause of hospitalization for patients over 65 years old. The costs related to heart failure have been estimated around 1.5 billion euros per year in France¹.

Despite important progress in the treatment including new drugs, new medical devices and innovative disease management programmes, the diagnosis of heart failure is often difficult in older adults with co-morbidities. Screening tests are usually based on blood pressure, glycaemic and cholesterol control. Although they are useful to detect high risk patients, they are limited regarding their sensitivity and specificity. During the past decade, promising biomarkers such as natriuretic peptides have been identified to diagnose heart failure, but their predictive value remains relatively poor. **The HOMAGE consortium is willing to validate more specific and more sensitive biomarkers which should facilitate an early detection of the disease in patients at risk.**

To achieve this goal, the consortium agreed on the use of an ‘omic-based’ approach. This approach aims to validate promising biomarker candidates by crossing a large volume of data (genomics, proteomics, miRNomics, transcriptomics and metabolomics). This would permit scientists to understand new pathophysiological mechanisms, signaling pathways and identify new therapeutic targets to prevent heart failure.

The HOMAGE consortium will manage cohorts for a total of 30 000 patients. The European researchers will firstly identify biomarker candidates in blood and study their predictive value for heart failure and common co-morbidities associated with ageing (renal impairment, cognitive disorders...). Subsequently, HOMAGE will lead a clinical trial to look for novel treatments of heart failure that can be targeted specifically to those patients at risk. This trial

¹ Fédération Française de Cardiologie

will allow identifying patients' omics based biomarker profiles most likely to predict response to treatment with the better benefit/risk ratio, an attempt into personalized medicine.

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The 17 partners of HOMAGE project: www.homage-hf.eu

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Inserm Transfert, France: <http://www.inserm-transfert.fr/>

European Drug Development Hub, France: <http://www.fondationtransplantation.org>

ACS Biomarker, Netherlands: <http://acsbiomarker.com/>

Randox Testing Service, United Kingdom: <http://www.randoxtestingservices.com/>

Medical University of Graz, Austria: <http://www.meduni-graz.at/en/>

University of Manchester, United Kingdom: www.manchester.ac.uk

Fundación para la Investigación Médica Aplicada, Spain: www.cima.es

University College Dublin, Ireland: www.ucd.ie

University of Hull, United Kingdom: www.hull.ac.uk

Maastricht University, Netherlands: <http://www.maastrichtuniversity.nl/>

Istituto di Ricerche Farmacologiche 'Mario Negri', Italy: <http://www.marionegri.it/mn/en/>

Hannover Medical School, Germany: <http://www.mh-hannover.de>

University of Leuven, Belgium: www.kuleuven.be/english/

London School of Hygiene, United Kingdom: <http://www.lshtm.ac.uk/>

Emory University, United States: <http://www.emory.edu>

University of Glasgow, United Kingdom: <http://www.gla.ac.uk/>

Collaborative institutions:

The Trustees of Boston University, National Heart, Lung, and Blood Institute's Framingham Heart Study, United States

Imperial College, United Kingdom

Steno Diabetes Center (Novo Nordisk), Denmark

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Founded in 1964, the French National Health and Medical Research Institute (Inserm) is a public science and technology institute, jointly supervised by the French Ministry of Higher Education and Research and the Ministry of Health.

The mission of its scientists is to study all diseases, from the most common to the most rare, through their work in biological, medical and public health research.

With a budget of 905 million euros in 2011, Inserm supports more than 300 laboratories across France. In total, the teams include nearly 13,000 researchers, engineers, technicians and administrative staff, etc.

Inserm is a member of the National Alliance for Life and Health Sciences, founded in April 2009 with CNRS, Inserm, the CEA, INRA, INRIA, the IRD, the Pasteur Institute, the Conference of University Presidents - Conférence des Présidents d'Université (CPU) and the Conference of Chairmen of The Regional and University Hospital Centres - Conférence des directeurs généraux de centres hospitaliers régionaux and universitaires. This alliance forms part of the policy to reform the research system by better coordinating the parts played by those involved and by strengthening the position of French research in this field through a concerted plan.

Inserm is the leading provider of European "Health" projects with 28 projects coordinated by the Institute under the FP7 initiative.

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