

PRESS RELEASE

Researchers from CIC bioGUNE take part in SYSGENET European Network

- *SYSGENET European network is devoted to the use of mice strains allowing the simulation of genetic variability existing within the human population.*

(Bilbao, 23rd April 2010) - The European Science Foundation (ESF), which belongs to the European Union, with its COST programme (European Co-operation in Science and Technology), approved the creation of the network called SYSGENET (*BM0901: European system for investigating genetic human diseases using mouse genetic reference populations*), co-ordinated by Prof. Klaus Schughart (Helmholtz Centre for Infection Research in Braunschweig, Germany). Juan Manuel Falcón and Ana M^a Aransay, researchers from the Centre for Co-operative Research in Biosciences, CIC bioGUNE, are two of the Spanish representatives in the organisation's committee, in which 30 institutions from 15 European countries participate.

The main goal of SYSGENET network is to establish, maintain and use mice populations that enable the simulation of the genetic variability existing within the human population. During the last decades, the use of model organisms like mice made an important contribution to the knowledge of genes involved in the development of numerous diseases, especially thanks to the use of genetically modified organisms and knockouts.

“Nevertheless, the study of these genes and polymorphisms’ interactions under different conditions to generate the variations that exists among different individuals was not so fruitful. This was mainly due to the lack of a well controlled model system

with a high genetic variability, able to simulate the diversity in humans, and allow a multigenic approach in the studies of complex processes like obesity, diabetes, atherosclerosis, cancer, neurological disorders or the establishment and development of infections”, said Juan M. Falcón.

The main feature of the mice population considered as a genetic reference is that, according to Falcón, *“they have a high genetic variability that is very well controlled and characterised giving a very high-resolution genetic map”*. This provides the scientific community with a model system that is perfect for identifying and characterising the genetic networks implied in the expression of a determined phenotype, such as the case for a disease development or penetration, or the resistance or sensitivity to an infection.

“This model system is also very interesting for the pharmaceutical industry, as it enables to make preclinical studies on a population scale of the toxicity of a particular medicine and, thus, to define at an early stage the process of drug development (before involving human populations) whether it continues or not, representing substantial saving in the development expenditure”, concludes Falcón.

These populations offer the possibility to carry out biological studies of systems designed to determine which genes have a major influence in a given biological process or in the composition of an organ, tissue or biologic fluid, and enable the search of new biological disease markers.

➤ **Organisation Committee**

SYSGENET network is coordinated by an organisation committee, formed by three representatives from each country. This committee makes the decisions on the activities that will be carried out within the network and distributes the money granted by the European Union among the activities organised (short visits of the researchers from the laboratories of the network, press releases, etc.). Moreover, it organises the projects that will be carried out in the future within the European research framework in the field related to the use of mice population. The working groups within the network are entrusted with other activities and look after different aspects of the currently undertaken research.

