BSC coordinates an international project to share and reuse cancer genomic data at a global level

EUCANCan has been chosen as one of the driver projects of the Global Alliance for Genomics and Health.

Hospitals, research centers and experts on Law of Spain, France, Germany, The Netherlands and Canada participate in EUCANCan, a project to allow both research and cancer treatments to be shared and re-used by the whole scientific community.

BSC has showed in previous researches that merging and reanalysing biomedical data from different studies significantly increases the chances of new discoveries.

This oncological genomic initiative is a technical framework within which to lay the groundwork for a global Personalised Medicine.

Barcelona Supercomputing Center (BSC) coordinates the EUCANCan project, which will foster the re-use of genomic data related to different types of cancer for biomedical research. The project, to start on February 11th in Barcelona, is funded by the European Commission and the Canadian Institute of Health research and has been recently chosen as the reference project by the Global Alliance for Genomics and Health.
The volume of genomic data related to cancer has grown in an exponential way during the last years, but it has done so in an uncontrolled way. The different methods with which each center generates, classifies and stores its data are the main bottleneck that researchers face when they need to extract knowledge from this huge volume of information. Very few research groups have the capacity to homogenize data coming from different studies to be able to group and revise them, and in so doing reaching new results. This causes that, in practical terms, massive data accumulation is not resulting in more possibilities to make new discoveries.

The target of EUCANCan is to break with these dynamics by homogenizing and standardizing the cancer database of the centers that participate in this project, and establishing methods and processes that allow a more efficient use of data and that could be used as a reference model in genomic medicine internationally.

During the four years of the project, it is expected that EUCANCan will process and provide the scientific community with around 30-35 thousand patient samples from different types of cancer, coming from different nodes involved in this project.

Standardizing procedures and formats will let a combined data analysis to extract all the possible information and will boost, among others, the discovery of new biomarkers. “Increasing the analysis of data volume lets us see more clearly the genetic architecture of diseases and exponentially increases the possibility of making new discoveries”, according to David Torrents, ICREA researcher, leader of the Computational Genomics Group of the Barcelona Supercomputing Center and coordinator of the EUCANCan project.

BSC has been able to determine the great opportunities that the massive re-use of data can provide. A clear example is the reanalysing of genetic data coming from five public data bases that allowed the identification of new genetic markers for type 2 diabetes risk, as shown in this Nature Communications article. In addition, the center has the capacity of computing and data management that make it an optimal place to carry out this type of project.

The EUCANCan project will be carried out by a consortium with the participation of some of the world reference institutions of biomedicine genomics, including research centers, hospitals and experts on Law of Spain, France, Germany, The Netherlands and Canada.

The kick-off of the project will be a meeting to be held in Barcelona on February 11th.

Last January the renowned Global Alliance for Genomics and Health gave EUCANCan the qualification of driver project in its objective of establishing both a legal framework and technical standards to share genomic data in a responsible way within the Human Rights.

**Complete list of EUCANCan consortium partners:**

Germany: Deutsches KrebsForschungsZentrum Heidelberg (DKZF), European Molecular Biology Laboratory (EMBL), Heidelberg’s University Hospital (UKL-HD), The Charité –Berlin’s University Hospital (UMB), Heidelberg Academy of Sciences and Humanities (HAdW), LINQ management GmbH, Steinbeis GmbH.

Canada: Ontario Institute for Cancer Research (OICR), The Royal Institution for the Advancement of Learning / McGill University

Spain: Barcelona Supercomputing Center (coordinator), Center for Genomic Regulation (CRG), Consortium Institute of Biomedical Research August Pi i Sunyer (IDIBAPS), Catalan Institute of Oncology (ICO), Private Foundation Institute of Oncological Research Vall d’Hebron (VHIO), University of the Basque Country / Euskal Herriko Unibertsitatea.
France: National Center for Scientific Research, Institut Curie.

The Netherlands: Hartwig Medical Foundation (HMF).

Barcelona Supercomputing Center - Centro Nacional de Supercomputación