Integrative genomics and chronic disease phenotypes: modelling and simulation tools for clinicians

Fact Sheet

Project Information

BIOBRIDGE

Grant agreement ID: 37939

Project website

Project closed

Start date
30 October 2006

End date
29 April 2009

Funded under
Life sciences, genomics and biotechnology for health: Thematic Priority 1 under the Focusing and Integrating Community Research programme 2002-2006.

Total cost
€ 2 529 999,00

EU contribution
€ 1 800 000,00

Coordinated by
INSTITUT D'INVESTIGACIONS BIOMEDIQUES AUGUST PI I SUNYER'
Spain

Objective

The omics revolution of recent years has led to an explosion of data. This information however is currently difficult to integrate and makes improving knowledge on the complexities of biological events a difficult task. A major constraint for small and

medium enterprises (SMEs) in the biotechnology field of data integration is the lack of appropriate tools for generation and analyses of dynamic models. BioBridge proposes to tackle this problem with the production of the Biobridge portal, an environment,where: 1)structured databases including genomic, proteomic, metabolomic information of metabolic pathways affected by disease will be 2)integrated to reconstruct the underlying metabolic pathways which, in turn, will enter in 3)a simulation environment for simultaneous analysis of multilevel data able to improve existing knowledge on complex metabolic processes.
The consortium brings together selected SMEs with complementary skills in the domains of semantic interoperability, heterogeneous data integration and simulation technologies to develop innovative tools to facilitate the interplay between omics data and clinical information.Synergies are ensured between SMEs and academic teams, as well as product quality assurance through generation of experimental data for model refinement and validation.Thus BioBridge academics and SMEs together facilitate a translational analysis of the test case: nitrosoredox imbalance of the cardiovascular system.The nitrosoredox disequilibrium governs O2 transport O2 utilization mismatching at tissue level in highly prevalent chronic disorders (chronic heart failure, chronic obstructive pulmonary disease and diabetes). It has been identified as a common pathway leading to the systemic effects, which are associated with poor prognosis and high use of healthcare resources.The produced simulation tools may help to identify appropriate biomarkers for non-invasive monitoring and offer a new state-of-the-art tool for clinicians.

Fields of science (EuroSciVoc)

natural sciences > computer and information sciences > data science > **data mining**

medical and health sciences > clinical medicine > endocrinology > **diabetes**

medical and health sciences > health sciences > **nutrition**

medical and health sciences > clinical medicine > **cardiology**

natural sciences > computer and information sciences > software > software applications > **simulation software**

Programme(s)

FP6-LIFESCIHEALTH - Life sciences, genomics and biotechnology for health: Thematic Priority 1 under the Focusing and Integrating Community Research programme 2002-2006.

Topic(s)

LSH-2005-1.1.0-3 - Topic for STREPs dedicated to SMEs in the area of Fundamental knowledge and basic tools for functional genomics in all organisms

Call for proposal

FP6-2005-LIFESCIHEALTH-7
See other projects for this call

Funding Scheme

STREP - Specific Targeted Research Project

Coordinator

INSTITUT D'INVESTIGACIONS BIOMEDIQUES AUGUST PI I SUNYER'

EU contribution

No data

Total cost

No data

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EU contribution

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Total cost

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