Glycomics by High-throughput Integrated Technologies (GlycoHIT)

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Research Areas

Biomarker Research

At a Glance

- Status: **Completed Consortium**
- Year Launched: **2011**
- Initiating Organization: **European Commission Seventh Framework Programme (FP7)**
- Initiator Type: **Government**
- Location: **Europe**

Abstract

The Glycomics by High-throughput Integrated Technologies (GlycoHIT) consortium aims to advance the development of reliable and fast diagnostic tests for the early detection of cancer. By creating high-throughput (HTP) technologies to analyze altered sugars, or glycobiomarkers, the consortium aims to allow scientists to diagnose different forms of cancer from a simple blood test without the need for biopsy. GlycoHIT will also further develop sugar testing technologies to allow this rapid form of diagnosis to be used in a clinical setting.

Mission

GlycoHIT aims to advance the development of reliable and fast diagnostic tests for the early detection of cancer. The international consortium, funded under the European Union’s Seventh Framework Programme, aims to develop technologies that will enable fast and accurate analysis of glycosylation in blood samples from cancer patients. By creating HTP technologies to analyze altered sugars, or glycobiomarkers, GlycoHIT aims to allow scientists to diagnose different forms of cancer from a simple

blood test without the need for biopsy. GlycoHIT will also further develop sugar testing technologies to allow this rapid form of diagnosis to be used in a clinical setting.

A number of specific sugar biomarkers associated with certain forms of cancer have already been identified, but more are needed to improve the accuracy with which they can be used for cancer diagnosis. GlycoHIT will also assist the identification of improved glycobiomarkers for cancer. By discovering new biomarkers, as well as modifying existing lab technologies to decrease the amount of time required for testing, GlycoHIT has the potential to deliver a diagnosis in minutes rather than days.

GlycoHIT brings a highly experienced, innovative, and interdisciplinary team of researchers from Europe, China, and the United States representing academia, industry, and clinical fields to significantly enhance some of the existing glycoanalytical technologies and to advance novel HTP glycoanalytical technologies beyond current state of the art.

Microchip technology and novel partitioning methods will be exploited for nanoscale HTP separations of serum glycoproteins for analysis by HPLC or LC–MS.

In parallel, lectin array technology will be radically improved by the innovative use of recombinant human lectins and lectin mimics derived by screening large phage displayed combinatorial libraries.

Aptamer libraries will be exploited for identification of lectin mimics and development of a glycosignature platform.

Compatibility of the lectin/lectin mimic array technologies with novel label-free biosensors will be explored.

Newly developed technologies will be validated by analysis of serum samples from a variety of cancer patient cohorts and will be supported throughout by experimental interaction analysis, complex structural modeling, and informatics.

Effective project management, commercially aware intellectual property management, and targeted dissemination activities supplement the core science and ensure maximum impact for the project.

Financing

GlycolHIT has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no. 260600.

Links/Social Media Feed

Homepage	http://www.glycohit.eu/
Facebook	https://www.facebook.com/pages/Glycohit/233067816711917?sk=info&tab=page_info

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