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[cordis.europa.eu/project/id/278535](http://cordis.europa.eu/project/id/278535)

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## HighGlycan

### Methods for High-Throughput Analysis of Protein Glycosylation

Glycosylation is a post-translational modification that enriches protein complexity and function. Dysregulation of glycosylation is associated with a wide range of diseases, including cancer, diabetes, as well as congenital, cardiovascular, immunological and infectious disorders. A number of studies identified potentially important glycan disease biomarkers. With regard to biotechnology, proper glycosylation of biologicals is important, as deviations in glycosylation are known to be associated with adverse drug reactions and reduced therapeutic efficacy. However, glycomics is significantly lagging behind genomics and proteomics, mainly due to the absence of high-throughput analytical methods which can reliably quantify a multitude of glycan structures in complex biological samples.

We are confident that by coordinated efforts of leading European scientists in glycan analysis using HPLC, MS and CGE-LIF technologies this project will make a decisive step forward by developing real high-throughput tools for glycosylation analysis. By teaming up with leading European researchers in the field of genome wide association studies this project will perform validation of all methods on extremely well characterized set of samples resulting from the FP6 EuroSpan project. The addition of the newly generated glycome data to the pre-existing information about these individuals will enable development of methods for the systems biology approach analysis of the glycome which will integrate glycomic, genomic and environmental data about thousands of individuals. The same methods will also be adapted for quality control and monitoring in the production of biopharmaceuticals.

Strong participation of SMEs in the project and close contacts with large industrial partners will ensure that research accomplishments achieved by collaboration between academic and industrial scientists are swiftly transformed into innovative products and services for the benefit of European industry.