

Project Summary

Carbohydrates are involved in a variety of fundamental biological processes, e.g. cellular differentiation, embryonic development and fertilization. They are also involved in numerous pathological conditions such as e.g. bacterial and viral infections, inflammatory diseases and cancer and therefore offer attractive pharmaceutical and diagnostic applications.

In contrast to the genomic and proteomic area, no large data collections for carbohydrates have been compiled so far. The availability of such comprehensive databases, however, will be a prerequisite to successfully perform large-scale glycomics projects aiming to decipher new, so far unknown biological functions of glycans. For this purpose, common protocols and quality criteria for the generation of experimental data and guidelines of good practise for the establishment of databases are indispensable, especially for NMR-, MS- and HPLC-data, which are the key technologies for the identification and analysis of carbohydrates.

The Internet offers the unique chance to constitute a global and interactive peer-to-peer communication for scientific data. The outlined initiative aims to provide a tool for streamlining European research in glycobiology through the development of bioinformatics standards, databases, algorithms and software components. To guarantee maximal synergetic effects other available bioinformatics and biomedical resources will be linked to the newly created databases and cross-referenced in an efficient way.

The interpretation of MS- and NMR spectra as well as HPLC profiles of glycans is extremely complicated without appropriate reference data. The development of appropriate algorithms, which enable a rapid and reliable automatic annotation and interpretation of MS- and NMR-spectra, is a major aim of this design study. This effort is comparable to the automation of nucleic acid sequencing that enabled the large scale genomics studies and will lead to a comparable impetus for glycomics.

Group of Experts



General Concepts

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EUROCarbDB

Design Studies

Related to the Development of
Distributed, Web-based
European
Carbohydrate Databases
for Primary
Experimental Data

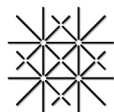


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Pharmaceutical Sciences
University of Basel

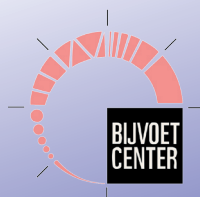


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The **EUROCarbDB web-site** offers an open forum, where all questions concerning standardisation of glycan-related databases, informatics for glycobiology and glycomics as well as data exchange formats will be discussed. It offers a unique chance to meet the experts, to discuss your own ideas and to be informed about ongoing projects.

To join the **EUROCarbDB forum** should be of interest to all who

- want to set up their own glycan database
- have already set up their own local database
- want to discuss ideas about new databases and applications
- are interested in informatics for glycoscience
- want to be informed about ongoing discussions and projects

www.eurocarbodb.org

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XML for Oligosaccharides - Glyde (enlargements)	6	René Ranzinger	40	Fri Aug 12, 2005 8:33 am Roland Stenutz →
XML for Oligosaccharides	0	Willi von der Lieth	35	Mon Jul 04, 2005 1:52 pm Willi von der Lieth →
Nomenclature of sugars with more than 6 carbons	0	Thomas Lütteke	30	Mon Jun 13, 2005 9:03 am Thomas Lütteke →
Monosaccharide Residue Notation	0	Willi von der Lieth	45	Sun Jun 12, 2005 3:11 pm Willi von der Lieth →

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