Carbohydrate Databases

Description

First of all, the accumulation and processing of published carbohydrate-related information resulted in several databases, including glycan structures and properties, taxonomic and bibliographic annotations, and experimental, analytical data.
The main curated and freely available carbohydrate databases are listed below.
GlyTouCan: It is a repository part of the GlyCosmos web portal. Glycan structures can be freely registered in the repository. A unique accession number is assigned to the glycan independently of the level of information about it. (https://glytoucan.org/)
CFG-Glycan database: In this database, it is possible to search for different composition or molecular weight topics. Both synthetic and natural compounds can be found. The results give wide information about the compound, a 2D picture and, besides other possibilities, there is a direct link to GLYCAM builder. (http://www.functionalglycomics.org/static/consortium/links.shtml)
UniCarbDB: In this database, glycan structures and fragments can be found characterised by mass spectroscopy. It is possible to see spectra of fragmentation, which was the methodology followed and instruments used and some biological context. Moreover, there is a direct link through the GlyTouCan accession number. (https://unicarb-db.expasy.org/)
CSDB: Carbohydrate Structure Database is an interesting database as it is possible to do a search going through genus, species and strain/subspecies. The search gives structural information in the form of a downloadable image, and there are also related references from where the structure was obtained. (http://csdb.glycoscience.ru/database/)
KEGG GLYCAN: This database offers a collection of experimentally obtained glycan structures. It is possible to get the searched structure in the SNFG form to download. There is also linked information to other databases. (https://www.genome.jp/kegg/glycan/)

It is worth noting that the monosaccharide nomenclature often varies from one database to another, increasing the difficulty in terms of exchanging and cross-linking data. The comprehensive resource of monosaccharides, Monosaccharide DB, encompassed inside glycosciences.de web portal, helps to overcome this problem allowing to obtain the name of a single monosaccharide in different notations. (http://www.monosaccharidedb.org/)

Category

1. News