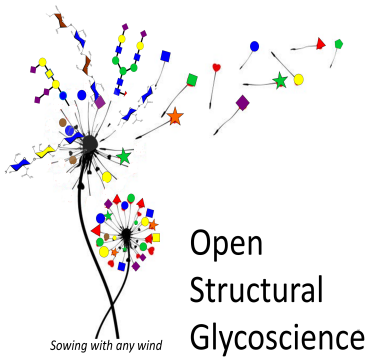


Open Structural Glycoscience

Description

Structural glycobiology is a subfield of glycobiology that studies the diverse structures and interactions of glycans, glycoconjugates and polysaccharides. These are complex carbohydrates that bind to proteins and other biomolecules in living systems. Structural glycobiology employs various methods to reveal the molecular details of these carbohydrates and their partners.
Some of these methods are X-ray and Neutron crystallography, Single Particle electron microscopy, nuclear magnetic resonance, and molecular modelling. Other methods, such as Analytical Ultracentrifugation, SAXS, MALS & Mass Photometry, provide information on the solution properties of carbohydrates and their complexes. Additionally, methods such as isothermal calorimetry, Surface Plasmon Resonance, and Bi-Layer-Interferometry measure the thermodynamics and kinetics of Protein-sugar interactions.
Glycobioinformatics integrates experimental data from different sources and helps correlate structure and function. It also connects glycomics to four â??bigâ?• omics: genomics, transcriptomics, proteomics and metabolomics. The following portfolio is a compendium of presentations given by scientists on the occasion of two EU and locally-funded events (Glytunes 3rd Network Wide Event & Structural Glycoscience Summer School) during Spring 2023 in Grenoble.

From monosaccharides to polysaccharides. From structures to 3D databases.-Serge Perez >http://glycopedia.eu/IMG/pdf/sp_struct_glyco_2023-3.pdf]

Glycoinformatics in the GlySpace. Frederique Lisacek https://prezi.com/view/gDRHdqWRdTvhFBk1wR5N/

Molecular simulations of simple and complex Carbohydrates. Elisa Fadda >http://glycopedia.eu/IMG/pdf/ef_struct_glyco_2023-2.pdf]

Protein X-ray crystallography and glycobiology Annabelle Varrot >http://glycopedia.eu/IMG/pdf/av_struct_glyco_2023-2.pdf]

X-ray for Glyco structural biology. Serial Crystallography at ID29 Daniele de Sanctis >http://glycopedia.eu/IMG/pdf/dds_struct_glyco_2023-2.pdf]

Neutron diffraction for deciphering protein-carbohydrate interactions in bacterial infection Lukas Gajdos >http://glycopedia.eu/IMG/pdf/lg_struct_glyco_2023-2.pdf]

Introduction to single-particle cryo-EM and its use to study glycosyltransferase complexes Rebekka Wild >http://glycopedia.eu/IMG/pdf/rw_struct_glyco_2023-2.pdf]

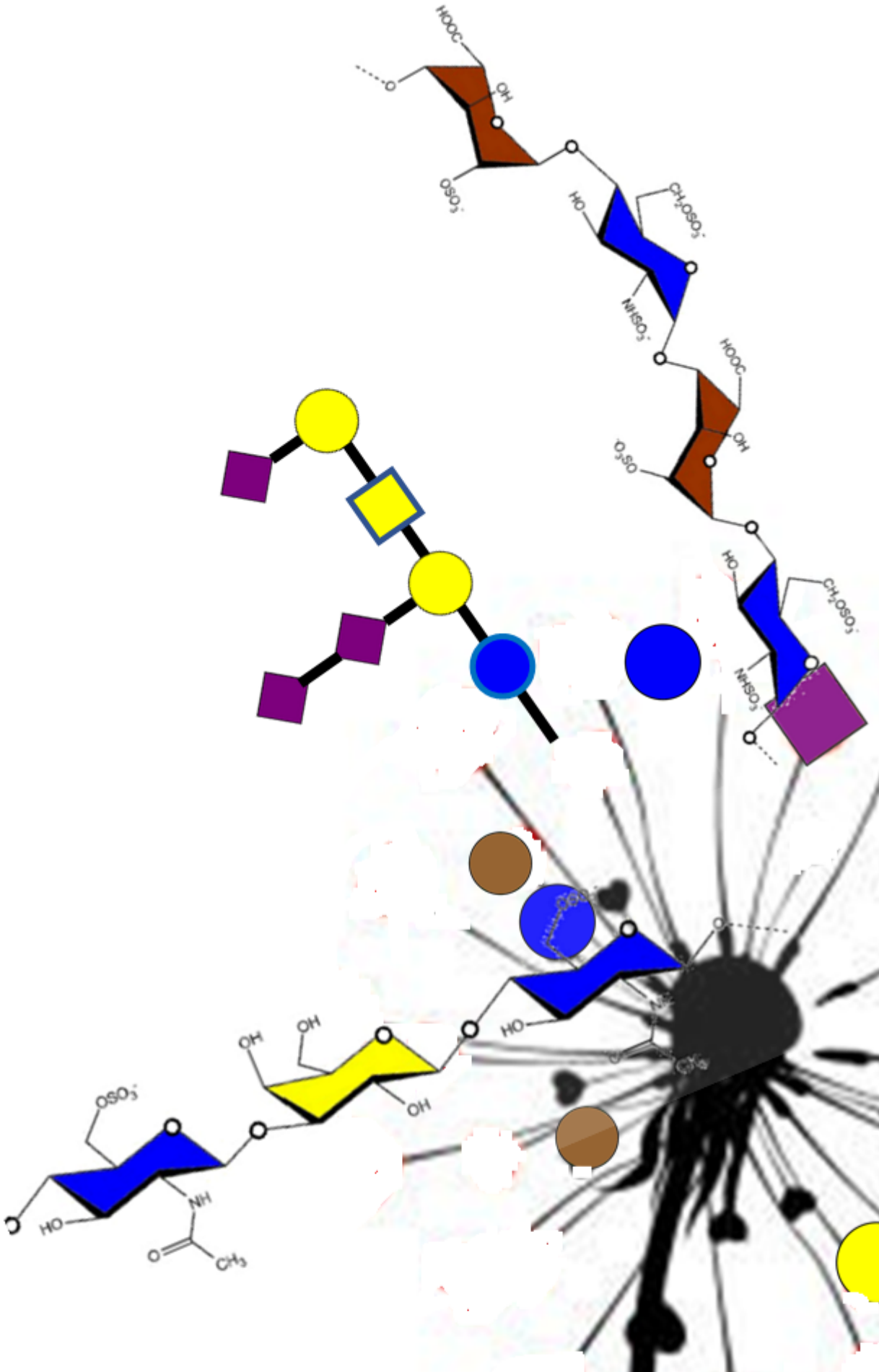
Determination of the structure of glycans and glycan interactions with protein by NMR Antonio Molinaro >http://glycopedia.eu/IMG/pdf/am_struct_glyco_2023-2.pdf]

Protein-carbohydrate interactions : Isothermal Titration Calorimetry Bruce Turnbull >http://glycopedia.eu/IMG/pdf/bt_struct_glyco_2023-2.pdf]

Solution studies: SEC-MALS, Analytical ultracentrifugation, SAXS and mass photometry Caroline Mas >http://glycopedia.eu/IMG/pdf/cm_struct_glyco_2023-2.pdf]

Surface Plasmon Resonance. BioLayer Interferometry Jean-Baptiste Reiser >http://glycopedia.eu/IMG/pdf/jbr_stuct_glyco_2023-2.pdf]

Preparation, structural characterization and biological assessment of Heparan Sulfate derived oligosaccharides Romain VivÃ¨s >http://glycopedia.eu/IMG/pdf/rv_struct_glyco_2023-2.pdf]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Documents joints

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Category

1. News