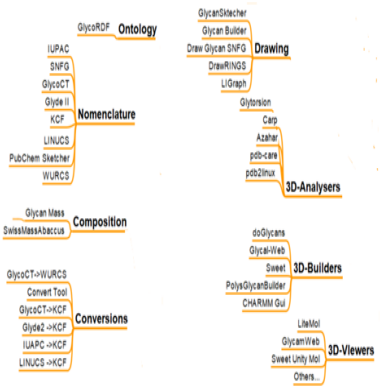
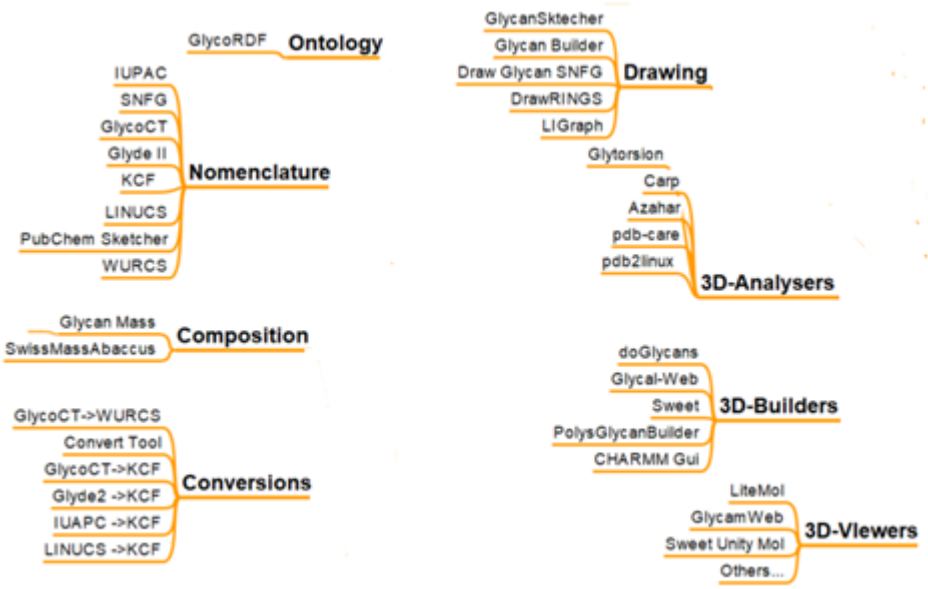


Representations

Description



NOMENCLATURE

- **IUPAC** www.sbcs.qmul.ac.uk/iupac/2carb/ Carbohydrate Nomenclature
- **SNFG** https://www.ncbi.nlm.nih.gov/glycans/snfg.html, Symbol Nomenclature for Glycans
- **GlycoCT** GlycoCT-a unifying sequence format for carbohydrates.
- **WURCS*** WURCS : the Web3 Unique Representation of Carbohydrate Structures.
- **KCF** Format used in the KEGG database
- **LINUCS** www.glycosciences.de/modeling/sweet-remote/ Linear Notation for Unique Description of Carbohydrate Structures
- **Glyde II** GLYDE-II : The GLYcan Data Exchange format
- **PubChem Sketcher** https://pubchem.ncbi.nlm.nih.gov/edit2/ From drawn structures generates SMILES, SMARTS, InChI and InChIKey

CONVERSION : Utilities

- **GlycoCT = WURCS** https://glytoucan.org/Structures/structureSearch
- **Convert Tool** convert from any format (GlycoCT condensed, KCF, IUPAC, LinearCode, LINUCS) to (almost) any other format (depending on input) http://rings.t.soka.ac.jp/cgi-bin/tools/utilities/convert/index.pl
- **GlycoCT*condensed* to KCF** : convert a glycan structure in GlycoCT format to KCF http://rings.t.soka.ac.jp/cgi-bin/tools/utilities/GlycoCTtoKCF_au/glycoct_index_au.pl
- **GlycoCT*XML* to KCF** : convert a glycan structure in GlycoCT format to KCF http://rings.t.soka.ac.jp/cgi-bin/tools/utilities/GlycoCTtoKCF/glycoct_index.pl
- **GlycoCT to CSDB Linear** : http://csdb.glycoscience.ru/database/core/translate.html
- **GLYDE2 to KCF** : convert a glycan structure in GLYDE2 to KCF http://rings.t.soka.ac.jp/cgi-bin/tools/utilities/GLYDE2toKCF/glyde2_index.pl
- **IUPAC to KCF** : convert a glycan structure in IUPAC format to KCF http://rings.t.soka.ac.jp/cgi-bin/tools/utilities/IUPACtoKCF_au/iupactokcf_index_au.pl
- **LINUCS to KCF** convert a glycan structure in LINUCS format to KCF http://rings.t.soka.ac.jp/cgi-bin/tools/utilities/LINUCStoKCF/linucs_to_kcf_index.pl
- **CSDB Linear to GlycoCT, Glyde-II, LinUCS, WURCS, GLYCAM, SMILES, 3D MOL** http://csdb.glycoscience.ru/database/core/translate.html#from
- **CSDB Linear to SweetDB, SNFG, structural formula image** http://csdb.glycoscience.ru/database/core/check_structures.html

COMPOSITION

- **GlycanMass** https://web.expasy.org/glycanmass/ GlycanMass is a tool which allows calculating the mass of an oligosaccharide structure
- **SwissMassAbaccus** https://glycoproteome.expasy.org/swiss-mass-abacus/ Swiss Mass Abacus is a calculator of peptide and glycopeptide masses.

DRAWING

- **GlycanSketcher** https://glycoproteome.expasy.org/sugarsketcher/ https://github.com/alodavide/sugarSketcher, SugarSketcher : Quick and Intuitive Online Glycan Drawing
- **Glycan Builder** http://sugarbind.expasy.org/builder An interface for building and displaying glycan structures
- **Draw Glycan SNFG** http://www.virtualglycome.org/DrawGlycan/ The symbol nomenclature for glycans (SNFG) contains 67 different monosaccharides represented using various colors and geometric shapes.
- **DrawRingS** http;//www.rings.t.soka.ac.jp/DrawRINGS: 2D HTML5-based glycan structure drawing tool for generating KCF and IUPAC format and/or querying the RINGS database, â?¦
- **LiGraph** : generates schematic drawings of oligosaccharides which are often used to display glycan structure.

3D-ANALYSERS

- **Carp** http://www.glycosciences.de/tools/carp/
  generates Ramachandran-like plots of carbohydrate linkage torsions in pdb-files.
- **Azahar** a PYMOL plugin for construction, visualization and analysis
- **pdb-care**www.glycosciences.de/tools/pdb-care/ checks carbohydrate residues in pdb-files for errors.
- **pdb2linucs** www.glycosciences.de/tools/pdb2linucs/
  automatically extracts carbohydrate information from pdb-files and displays it using the LINUCS-Code

3D-BUILDERS

- **doGlycans** Tools for Preparing Carbohydrate Structures for Atomistic Simulations of Glycoproteins, Glycolipids, and Carbohydrate Polymers for GROMACS.
- **Glycan-Web** Carbohydrate, Glycoprotein, GAGs Builder
- **Sweet** Sweet is a program for constructing 3D models of saccharides from their sequences using standard nomenclature
- **PolysGlycanBuilder** Algal, Bacterial, GAG, Plant Polysaccharides, N-O linked Glycan
- **CHARMM Gui** http://www.charmm-gui.org/?doc=input/glycan An option within the Glycan Reader & Modeler section of the general menu
- **Carbuilder** https://people.cs.uct.ac.za/~mkuttel/CBresidues.html
- **Rosetta Carbohydrate**
  https://www.rosettacommons.org/docs/latest/application_documentation/carbohydrates/WorkingWith
- **Others** Several Molecular Modeling software have provision to build 3D structures of glycan

3D-VIEWERS

- **LiteMol** Powerful and blazing-fast tools for handling 3D macromolecular data in the browser
- **Glycan-Web** 3D-Symbol Nomenclature for Glycans
- **SweetUnityMol** : Molecular 3D structures (SNFG compliant) and networks viewer . Virtual Reality. Manual
- **Glycan-Web** 3D-Symbol Nomenclature for Glycans
- **Others** Several Molecular Viewer platforms have provision to display 3D structures of glycan

Category

1. News