GlycoNet

CANADIAN GLYCOMICS NETWORK

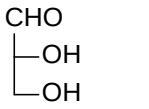
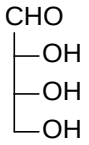
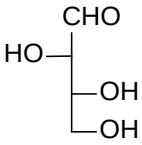
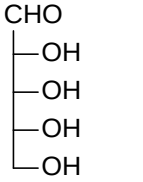
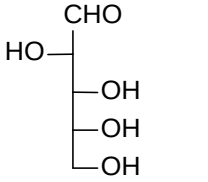
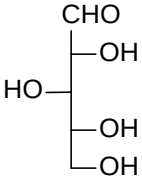
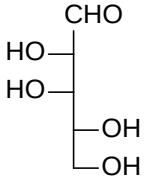
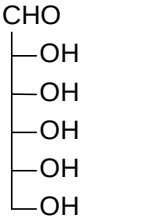
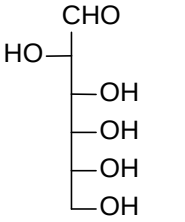
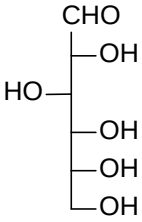
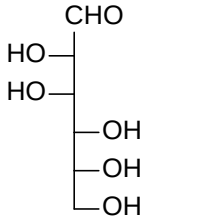
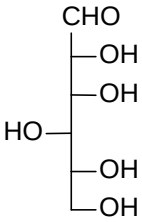
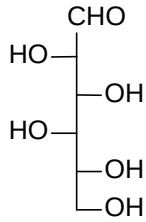
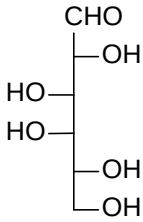
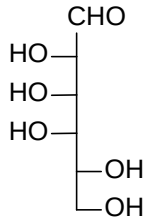
Carbohydrate Nomenclature Reference

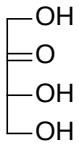
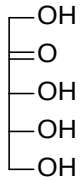
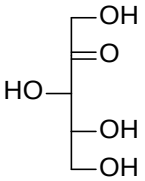
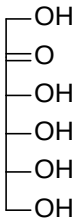
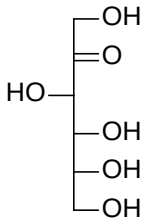
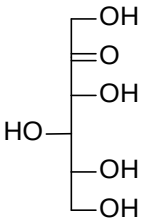
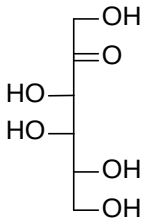
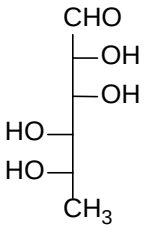
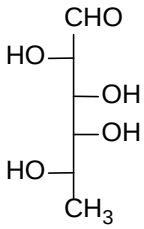
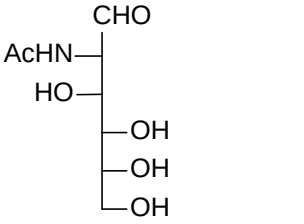
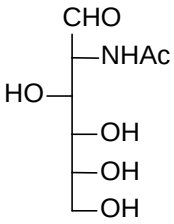
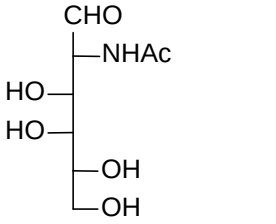
Winter 2019

Open-Chain Sugars

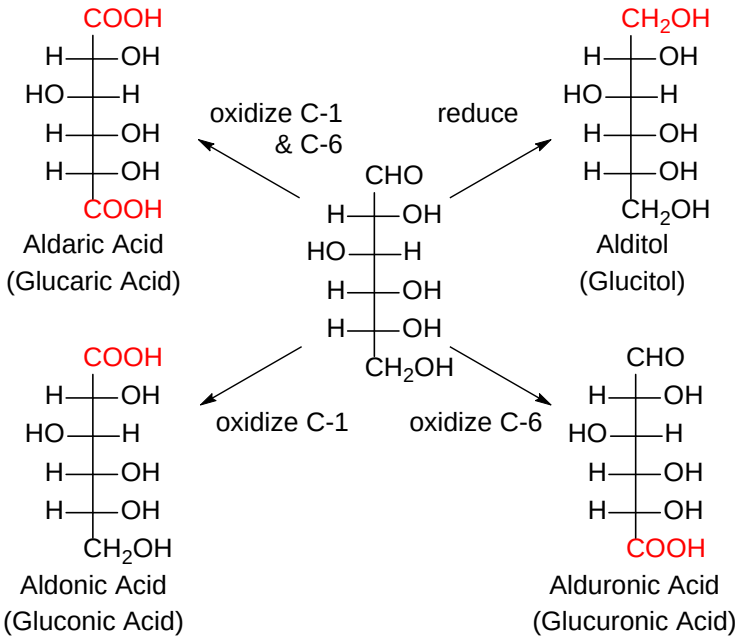
The D-series is shown; the L-series is the mirror image.

Formal IUPAC naming conventions may be found here:
http://www.chem.qmul.ac.uk/iupac/2carb/index.html

	Aldoses
Triose	 D-glyceraldehyde
Tetroses	 D-erythrose (D-Ery)  D-threose (D-Thr)
Pentoses	 D-ribose (D-Rib)  D-arabinose (D-Ara)  D-xylose (D-Xyl)  D-lyxose (D-Lyx)
Hexoses	 D-allose (D-All)  D-altrose (D-Alt)  D-glucose (D-Glc)  D-mannose (D-Man)  D-gulose (D-Gul)  D-idose (D-Ido)  D-galactose (D-Gal)  D-talose (D-Tal)

	Ketoses
Tetrulose	 D-erythrulose
Pentulose	 D-ribulose (D-Rul)  D-xylose (D-Xul)
Hexulose	 D-psicose (D-Psi)  D-fructose (D-Fru)  D-sorbose (D-Sor)  D-tagatose (D-Tag)
	Deoxysugars
	 Rhamnose (Rha) 6-deoxy-L-mannose  Fucose (Fuc) 6-deoxy-L-galactose
	Aminodeoxysugars (acetamidosugars)
	 2-acetamido-2-deoxy-D-mannose (ManNAc)  2-acetamido-2-deoxy-D-glucose (GlcNAc)  2-acetamido-2-deoxy-D-galactose (GalNAc)

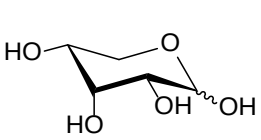
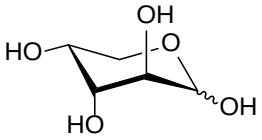
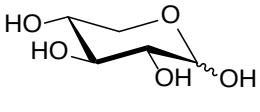
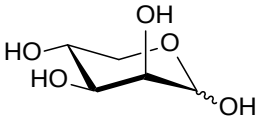
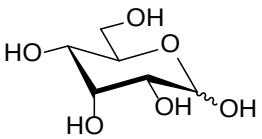
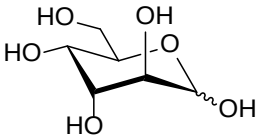
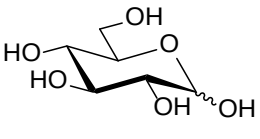
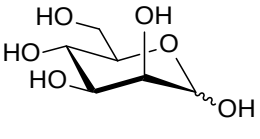
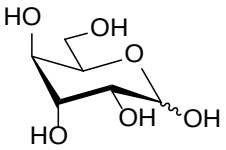
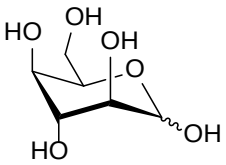
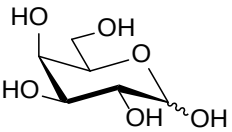
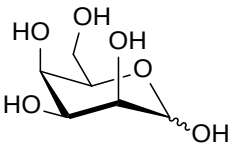
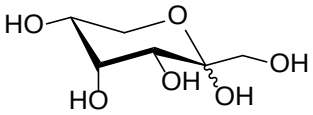
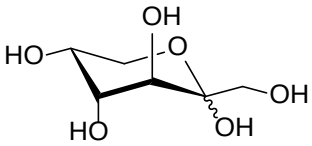
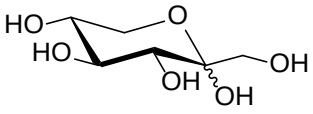
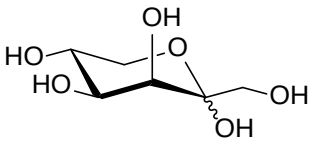
Oxidized & Reduced Sugars



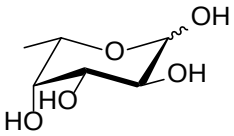
Cyclic Reducing Sugars

The D-series is shown; the L-series is the mirror image.

References: (1) Symbol Nomenclature for Graphical Representation of Glycans. *Glycobiology* **2015**, *25*, 1323-1324. (2) The GlycanBuilder and GlycoWorkbench Glycoinformatics Tools: Updates and New Developments. *Biol. Chem.* **2012**, *393(11),* 1357-1362.

	Aldoses			
Pentoses	 D-ribose (Rib) 	 D-arabinose (Ara) 	 D-xylose (Xyl) 	 D-lyxose (Lyx) 
Hexoses	 D-allose (All) 	 D-altrose (Alt) 	 D-glucose (Glc) 	 D-mannose (Man) 
	 D-gulose (Gul) 	 D-idose (Ido) 	 D-galactose (Gal) 	 D-talose (Tal) 
	Ketoses			
Hexuloses	 D-psicose (Psi) 	 D-fructose (Fru) 		
	 D-sorbose (Sor) 	 D-tagatose (Tag) 		

Deoxysugars



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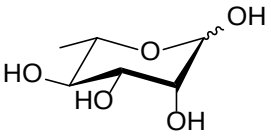
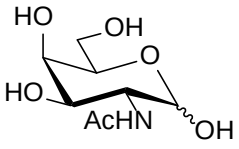
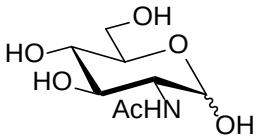


L-rhamnose (Rha)

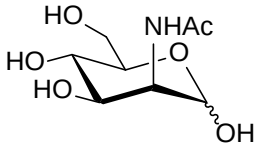
Aminodeoxysugars (acetamidosugars)



N-acetyl-galactosamine
(GalNAc)

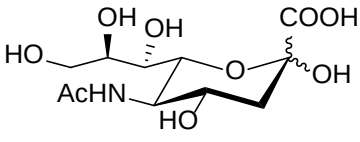


N-acetyl-glucosamine
(GlcNAc)

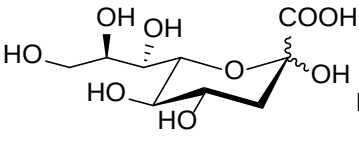


N-acetyl-mannosamine
(ManNAc)

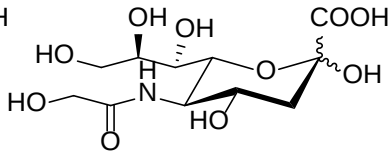
Sialic Acids (Neuraminic Acids)



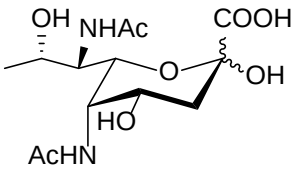
N-acetylneuraminic acid
(Neu5Ac)



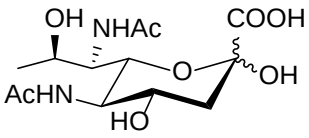
2-keto-3-deoxynononic acid
(KDN)



N-glycolylneuraminic acid
(Neu5Gc)

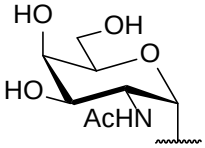


Pseudaminic Acid
(Pse)

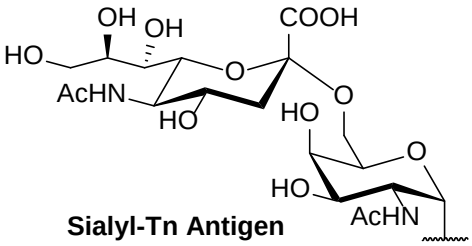


Legionaminic acid
(Leg)

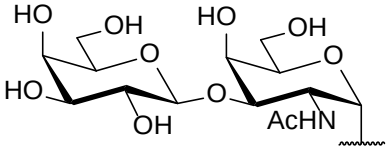
O-Glycans (attached to Ser/Thr)



Tn Antigen



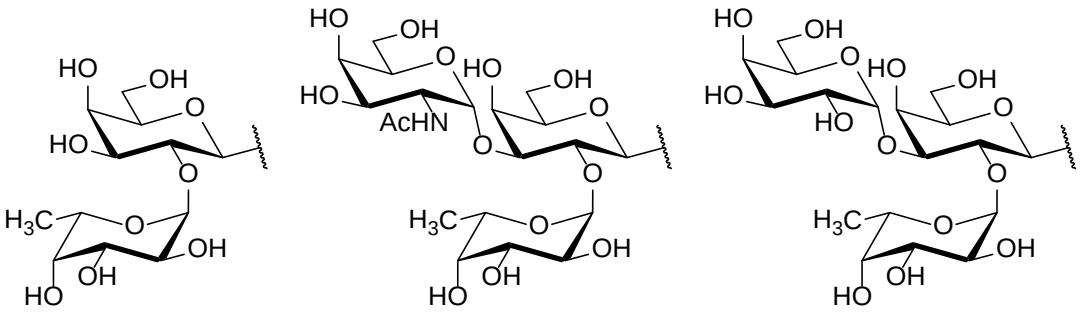
Sialyl-Tn Antigen



T Antigen (Core 1)

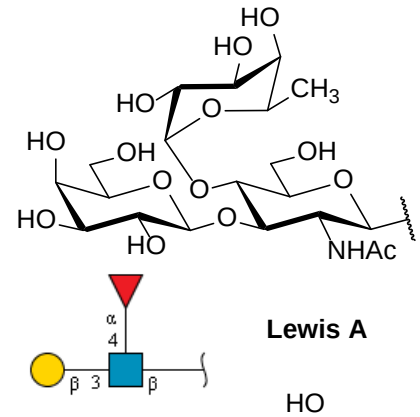
GlycoNet

Blood Group Antigens

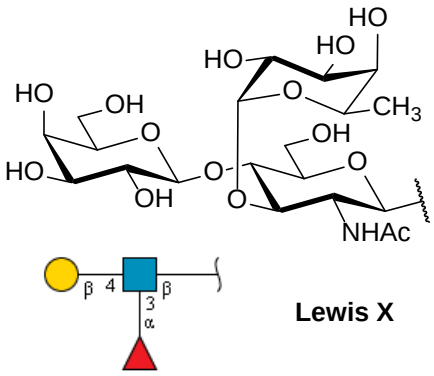


O(H) Antigen **A Antigen** **B Antigen**

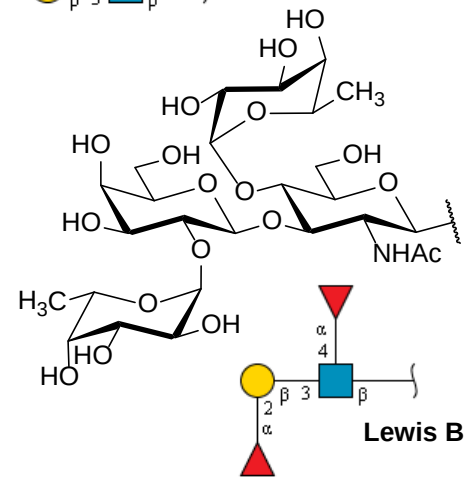
Lewis Antigens



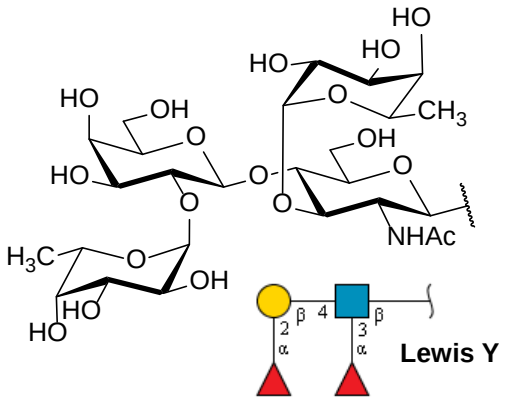
Lewis A



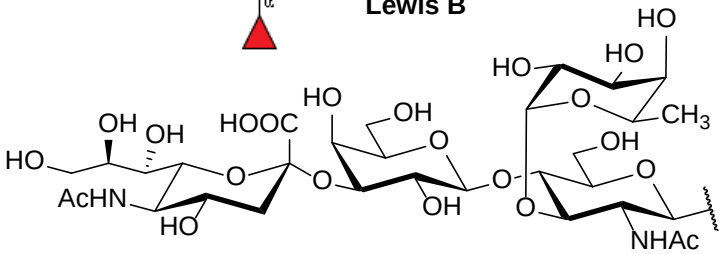
Lewis X

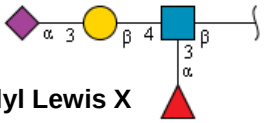


Lewis B



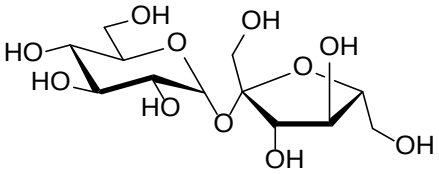
Lewis Y



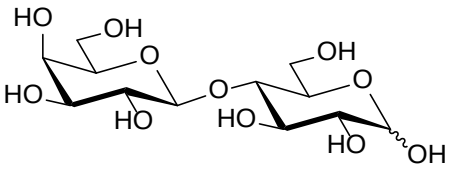


Sialyl Lewis X

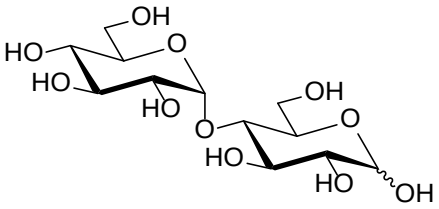
Disaccharides



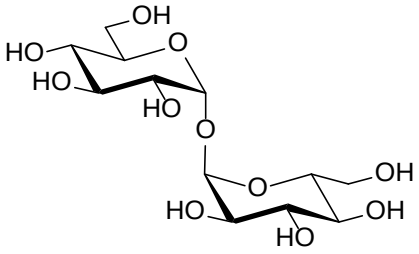
Sucrose
α-D-Glu-(1→2)-β-D-Fru*f*



Lactose
β-D-Gal-(1→4)-D-Glu

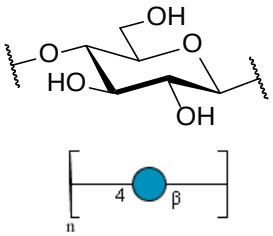


Maltose
α-D-Glu-(1→4)-D-Glu

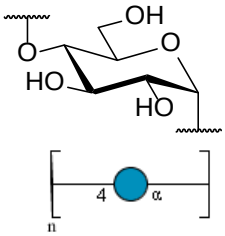


Trehalose
α-D-Glu-(1→1)-α-D-Glu

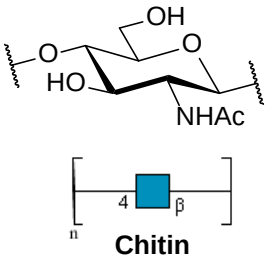
Polysaccharides



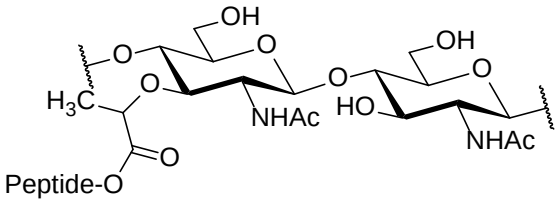
Cellulose
[(→4)-β-D-Glu-(1→)]$_n$

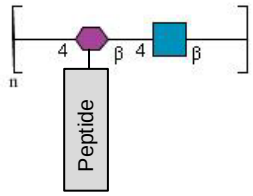


Starch
[(→4)-α-D-Glu-(1→)]$_n$

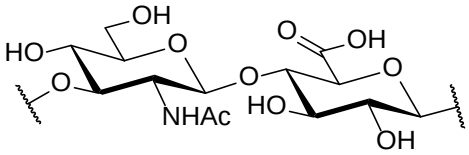


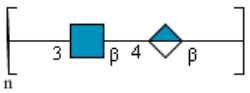
Chitin
[(→4)-β-D-GluNAc-(1→)]$_n$





Peptidoglycan
[(→4)-β-D-MurNAc-(1→4)-β-D-GlcNAc-(1→)]$_n$





Hyaluronan
[(→3)-β-D-GlcNAc-(1→4)-β-D-GlcA-(1→)]$_n$