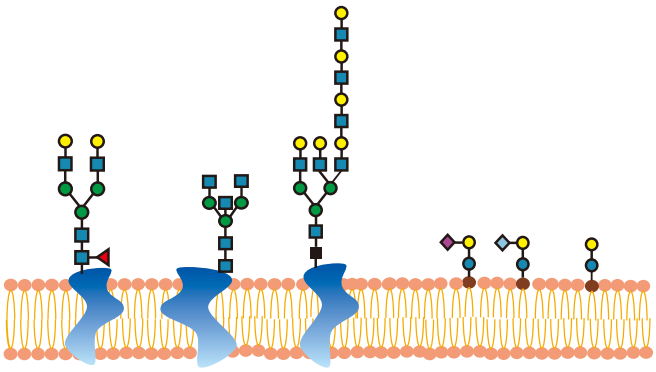
LIFE SCIENCE

Tumor-associated Antigens

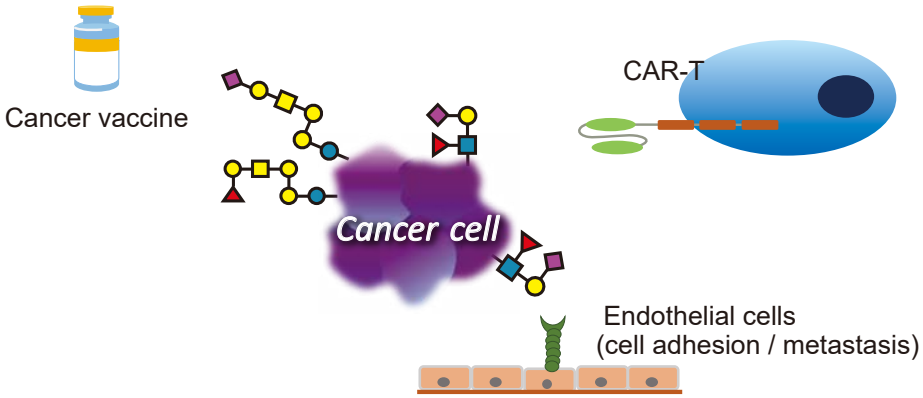
Carbohydrates play important roles in various biological functions such as cell recognition, cell adhesion, intercellular and intracellular signaling, and embryonic development. Cellular glycosylation profiles significantly change during carcinogenesis. These cellular carbohydrate structures are known as tumor-associated carbohydrate antigens, and they are considered promising targets for immunotherapy as well as developing vaccines and therapeutic antibodies. TCI supports the research in this field with various tools.

Glycan (Antigen) Name	Product Number			Tumor Tissues	Ref.
	Glycan	Conjugate	Antibody		
Sialyl Lewis X/ CD15s	S0849 S0922 S0923	H1730	A2849	Blood, Breast, Pancreas, Ovarian, Lung, Biliary tract, Gallbladder	1,2,3
Lewis X/CD15	S0946	H1719 L0381	A2578	Blood, Colon	4,5
Sialyl Lewis A	*AUR*	*AUR*	A2584 A2509	Colon, Pancreas, Biliary tract, Gallbladder	1
Lewis Y/ CD174	*AUR*	*AUR*	A2510	Blood, Breast, Kidney, Ovary, Pancreas, Prostate	2,3
GD_2			A3338	Lung, Neurogenic, Melanoma	12, 13, 14
GD_3/CD60a			A2580	Kidney, Neurogenic, Melanoma	2,3,6,7
GM_2	N0971	*AUR*	A2576	Blood, Breast, Gastrointestinal, Kidney, Lung, Neurogenic, Ovary, Pancreas, Prostate, Melanoma	2,7,8
GM_3	G0422 G0419 S0489 S0885	*AUR*	A2582	Blood, Kidney, Neurogenic	3,6
Forssman Antigen	F0584	*AUR*		Breast, Kidney	7
Gb_3/CD77	G0402 G0403 M1767	H1718	A2506	Blood, Colon, Pancreas	9,10
SSEA-3	G0355 G0434 G0592	*AUR*		Blood, Gastrointestinal, Kidney, Lung, Ovary	11
Globo H	G0447 G0596 G0589	H1794		Blood, Breast, Kidney, Ovary, Pancreas, Prostate	2,6



The structural changes in the glycomoiety of proteins and lipids in cancerous cells.

The glycomoiety structure of proteins and lipids changes in cancerous cells. For example, *N*-acetylglucosaminyltransferase V (GnT-V) is expressed at a very low level in normal cells, but is abundant in cancer cells. Due to such changes in the expression levels of glycosyltransferases, the synthesized oligosaccharide chains vary based on the type of cancer cells, and can be used as diagnostic markers.



Targeting tumor-associated carbohydrate antigen

Cancer cell-specific oligosaccharides play important roles, such as immortalization of cancer cell, cell adhesion / metastases, and abnormal growth. Such cancer cell-specific oligosaccharides are good targets for drug discovery, and these oligosaccharides are being used to develop therapeutic targets, vaccine preparations (using cancer antigens), inhibitors of carbohydrate synthesis, galectins, and selectins, antibody-based drugs targeting oligosaccharide antigens, and chimeric antigen receptor gene modified T cells (CAR-T).

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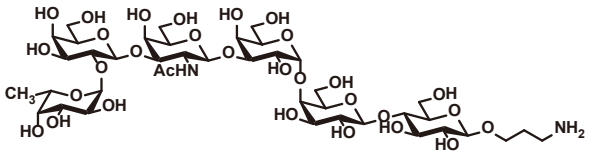
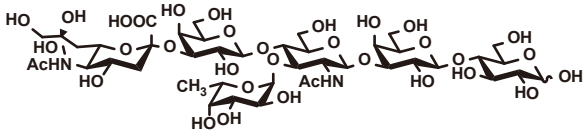
Tumor-associated carbohydrate antigens

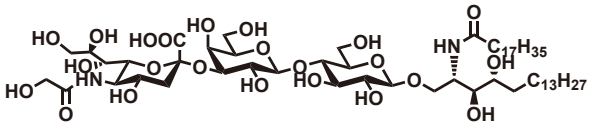
Globo-H-PrNH$_2$ [G0447]



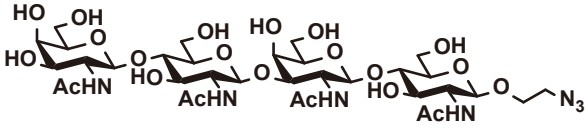
Sialyl Lewis X-Lactose [S0849]



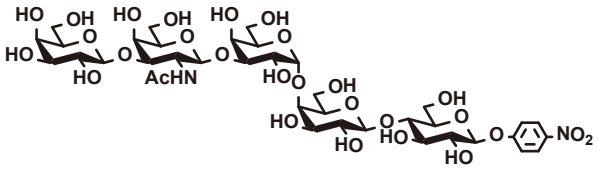
Ganglioside GM$_3$(Neu5Gc) (phyto-type) [G0510]



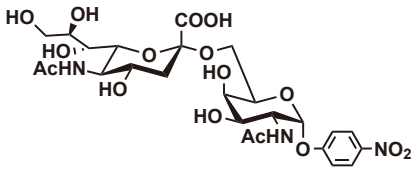
LacDiNAc Dimer Ethylazide [L0237]



SSEA-3 [G0355]

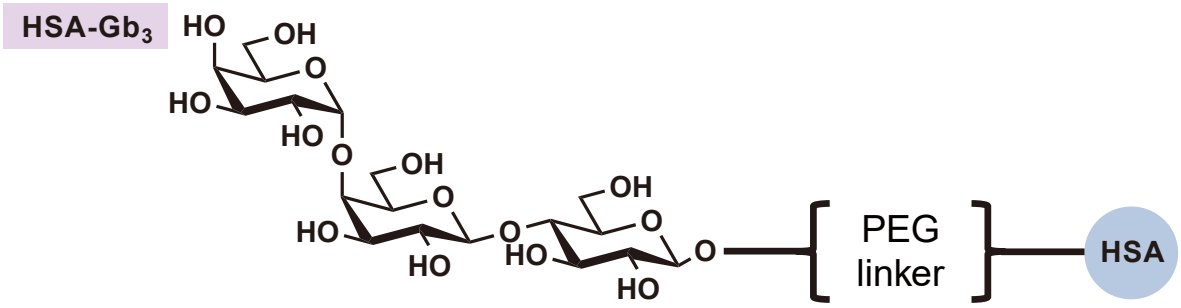


Neu5Acα(2-6)GalNAc-α-*p*NP [N0890]



HSA-Oligosaccaride Conjugates : useful tools for evaluating carbohydrate-binding molecules

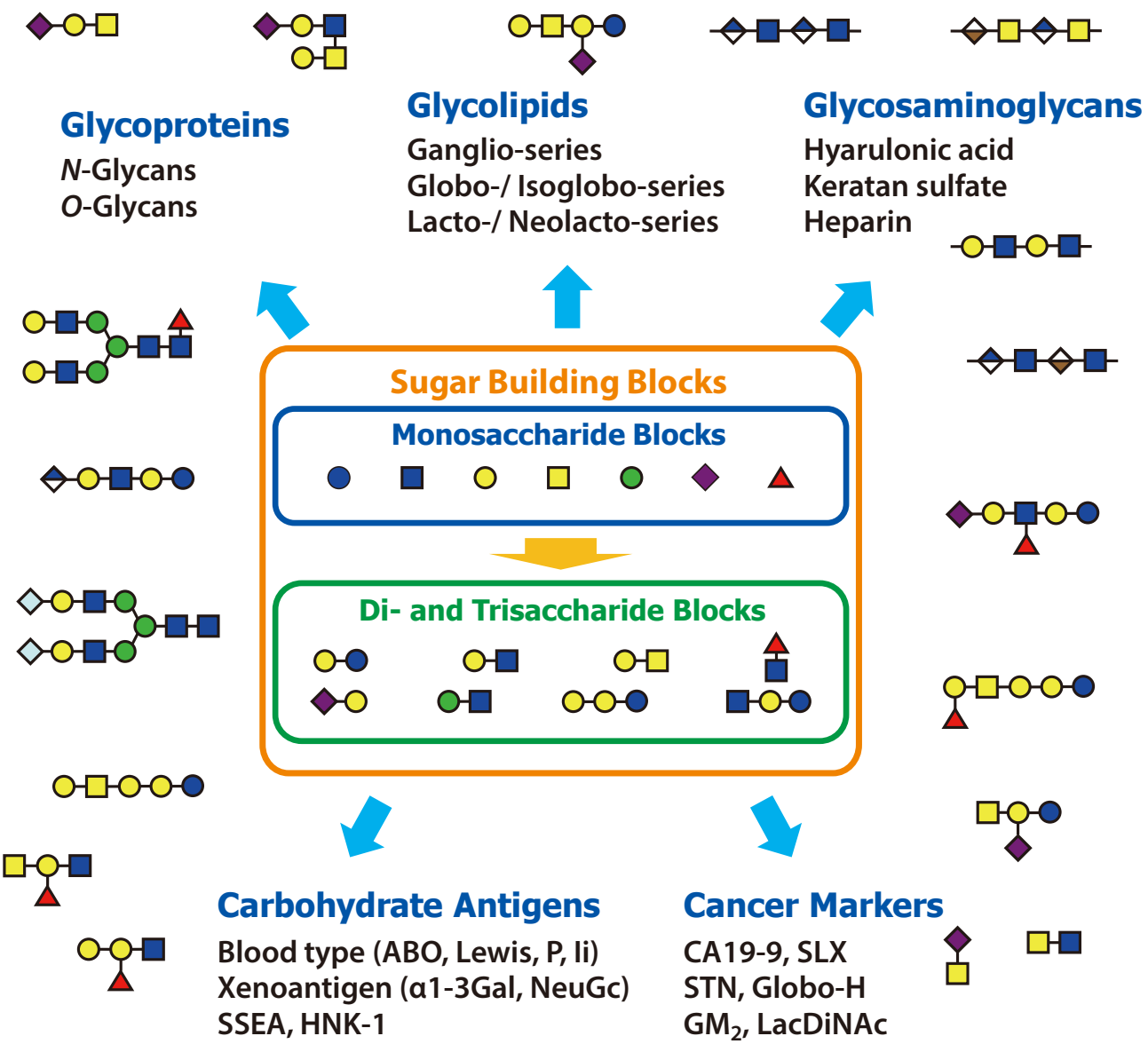
These are useful tools for evaluating carbohydrate-binding molecules, including antibodies. The recombinant human serum albumin (HSA) produced in plants contains no animal-derived components and cannot be contaminated with viruses. Additionally, it has the same structure, characteristics, and biological activity as natural HSA. Several sugar-conjugates are available, and it is also possible to manufacture the sugar-conjugates according to customer specifications. For more details on the products and contracts, please contact us.



HSA-Gb$_3$	0.1mg/vial [H1718]	**HSA-GM1 Pentasaccharide**	0.1mg/vial [H1767]
HSA-Gb$_5$	0.1mg/vial [H1777]	**HSA-Globo-H**	0.1mg/vial [H1794]
HSA-Lewis X	0.1mg/vial [H1719]	**HSA-L1-L1**	0.1mg/vial [H1782]
HSA-Sialyl Lewis X	0.1mg/vial [H1730]		

Chemically Synthesized Oligosaccharides

TCI provides various functional oligosaccharides which play important roles such as cell-cell communication, adhesion, proliferation control and signaling. We can synthesize the oligosaccharides using various sugar building blocks which are prepared in 10 - 100 kg scale.



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