

Virus-related Glycan Epitopes (Virus-related Oligosaccharides)

Virus-oligosaccharide relationship

When a virus infects mammalian host cells, glycan epitopes on the cell surface is exploited as a virus receptor. And the surface of a virus particle is frequently modified with glycosylation in order to escape from an immunological host defense. For studies of virus-glycan interaction and infectious inhibition, we show a lineup of oligosaccharide products containing virus-related glycan epitope structures.

Target of host defense

- Activation of complement system
- Aggregation and neutralization of virus
- Opsonin effect
- Induction of autophagy

Research for immune response against viruses mediated by glycan epitopes

Virus adhesion receptor

Virus Infection mediated by terminal glycan epitopes of oligosaccharide on a host cell surface

Host cell

Development of seeds exploration targeting infection and budding of viruses

Protection of antigen

Escape from immune-recognition of exogenous substance by highly frequent glycosylation of virus particles





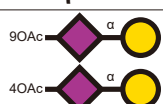





Substrate of virus enzyme

Virus budding accompanied with destruction of glycan epitopes on a cell surface for next infection

Infected host cell

	Virus		Glycan (representative images)
	Spike protein, Hemagglutinin		Lectins
	Hemagglutinin esterase (fusion), Hemagglutinin neuraminidase		

Virus-related terminal epitopes of oligosaccharide

Saccharide Symbol Saccharide Linear Code	TCI Product Name or [TCI Product Number]	Adenoviridae			Polyomaviridae				Parvoviridae					
		Human (HAdV-8, 19a, 37)	Bovine (BAd3)	Porcine (Pad4)	Mouse Polyomavirus	BK (HPyV-1)	JC (HPyV-2)	SV40	CPV&FPV	MVM	AAV1, AAV4-6	AAV9	Erythroparvovirus (B19V)	
 Siaα2-8Siaα2-3Gal					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>				
 Siaα2-3Galβ1-3GalNAc	SSEA-4	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	
 Siaα2-3Galβ1-4GlcNAc	[N0854][S0910] Neu5Acα(2-3)Galβ(1-4)GlcNAc-β-propylamine		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>				
 Siaα2-6Galβ1-4GlcNAc	[S0523][D4065][N1065][N0913][D4217][N0950] [N0856][N1117][N1118]		<input type="checkbox"/>				<input type="checkbox"/>					<input type="checkbox"/>		
 9-OAc SiaαGal 4-OAc SiaαGal	[A3414][A3415] 9OAc-Neu5Acα(2-3)Galβ(1-4)Glc 9OAc-Neu5Acα(2-6)Galβ(1-4)Glc													
 (Galβ1-4GlcNAc) _n	[G0515] LacNAc 2mer (L1-L1) LacNAc 4mer (L1-L1-L1-L1)			<input type="checkbox"/>									<input type="checkbox"/>	
 Galβ1-4(α1-3Fuc)GlcNAc	[S0946][H1719]													
 GalNAcα1-3(α1-2Fuc)Galβ	[A2631] Trisaccharide (A Antigen) PEG-resin Blood-type A Antigen propylamine													
 Gala1-3(α1-2Fuc)Galβ	[B4172] Trisaccharide (B Antigen) PEG-resin Blood-type B Antigen propylamine													
 GalNAcβ1-3Gala1-4Gal	[G0354][G0580] Gb ₄ -PrNH ₂													<input type="checkbox"/>

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Reoviridae	
Rotaviruses A and C	
ReoViruses	
“SA-dependent”	○
“SA-independent”	○
Type1 (Lang)	○
Type3 (Dearing)	○
Caliciviridae	
Noroviruses	
Human/bovine/canine	○
Murine (MNV)	○
Lagovirus (RHDV)	
Saporivirus(Porcine)	○
Vesivirus	○
Coronaviridae	
Alpha	○
Beta	○
Gamma	
Trovirinae	
Picornaviridae	
EV68	○
EV70	○
Porcine Sapelovirus	○
Coxsackie A24	○
Arenavirus	
Lassa (internal receptor)	○
Paramyxoviridae	
Human para influenza	○
Newcastle Disease	○
Sendai	○
Mumps	○
Measles	○
Orthomyxoviridae	
Human Influenza A	○
Avian Influenza A	○
Influenza B	○
Influenza C	○
Influenza D	○
Isa	○

Reference A. J. Thompson, R. P. de Vries, J. C. Paulson, *Curr. Opin. Virol.* **2019**, 34, 117.
<https://doi.org/10.1016/j.coviro.2019.01.004>

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Oligosaccharides containing virus-related glycan epitopes

[Siaα2-3Galβ1-3GalNAc]

SSEA-4

Contact us

[Siaα2-3Galβ1-4GlcNAc]

Neu5Aca(2-3)Galβ(1-4)GlcNAc-β-pNP
Sialyl Neolactotetraosylceramide (=Sialyl nLc₄Cer)
Neu5Aca(2-3)Galβ(1-4)GlcNAc-β-propylamine

2mg [N0854]
[S0910]
} Contact us

[Siaα2-6Galβ1-4GlcNAc]

Sialylglycopeptide (SGP) 10mg [S0523]
Disialyloctasaccharide 10mg [D4065]
Neu5Aca(2-6) N-Glycan 1mg [N1065]
DisialylInonasaccharide-β-pNP 1mg [N0913]
DisialylInonasaccharide-β-ethylazide 1mg [D4217]
Neu5Aca(2-6)Galβ(1-4)GlcNAc-β-ethylamine 5mg [N0950]
Neu5Aca(2-6)Galβ(1-4)GlcNAc-β-pNP 2mg [N0856]
Neu5Aca(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAc-β-propylamine Contact us [N1117]
Neu5Aca(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAc-β-propylamine Contact us [N1118]

[9-OAcSiaαGal]

N-Acetyl-9-O-acetylneuraminic Acid
N-Acetyl-9-deoxy-9-acetamidoneuraminic Acid
9OAc-Neu5Aca(2-3)Galβ(1-4)Glc
9OAc-Neu5Aca(2-6)Galβ(1-4)Glc

5mg [A3414]
[A3415]
} Contact us

[(Galβ1-4GlcNAc)_n]

L1-L1-β-PEG₃-biotin
LacNAc 2mer (L1-L1)
LacNAc 4mer (L1-L1-L1-L1)

[G0515]
} Contact us

[Galβ1-4(α1-3Fuc)GlcNAc]

SSEA-1-PrNH₂
HSA-Lewis X

Contact us [S0946]
0.1mg/vial [H1719]

[GalNAca1-3(α1-2Fuc)Galβ]

A Antigen PEG-trifluoroacetamide
Trisaccharide (Blood-type A Antigen) PEG-resin
Blood-type A Antigen propylamine

[A2631]
} Contact us

[Gala1-3(α1-2Fuc)Galβ]

B Antigen PEG-trifluoroacetamide
Trisaccharide (Blood-type B Antigen) PEG-resin
Blood-type B Antigen propylamine

[B4172]
} Contact us

[GalNAcβ1-3Gala1-4Gal]

GalNAcβ(1-3)Gala(1-4)Galβ(1-4)Glc-β-pNP
Gb₄-PrNH₂
Gb₄-Ceramide

} Contact us [G0354]
1mg / 5mg [G0580]

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