

Oligosaccharides Applied to Sugar-conjugates

TCI provides a variety of azido- or amino-linked oligosaccharides and conjugation materials for Sugar-conjugates

Through the research in carbohydrate field, various biological functions of oligosaccharides have been elucidated in life phenomena such as infection, cell-cell recognition, information transmission, fertilization and cell division. The materials containing sugar chains are expected as new functional bioengineering materials which can be applied to medical materials, for example biosensors which specifically bind to toxins or pathogens, composite materials used for surface plasmon resonance (SPR) or crystal oscillator (QCM), or affinity chromatography for the purification of various biopolymers.

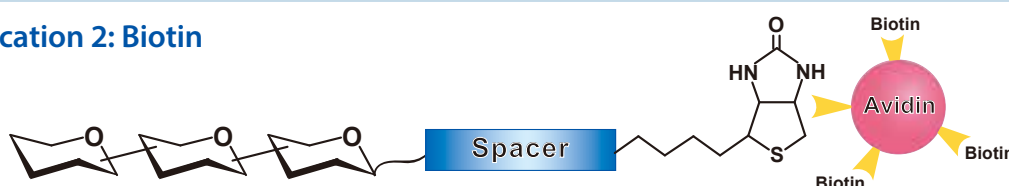
Sugar chains having a thiol group, carboxyl group, amino group or azido group at the reducing terminal can be applied to immobilization onto resin beads and gold substrates, introduction of fluorescent groups or biotin, or the use of click chemistry as shown below. Sugar-conjugates are expected as important tools for new bioengineering building materials.

Application 1: Surface Plasmon Resonance (SPR)



Technique to detect interactions or binding capacity between sugars and viruses or proteins.

Application 2: Biotin



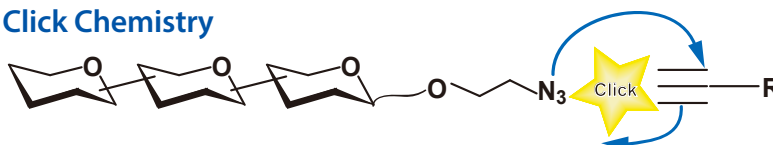
Biochemical and diagnostic reagents for cancer treatments and missile drugs capable of limited lesion attack.

Application 3: Beads/Resins



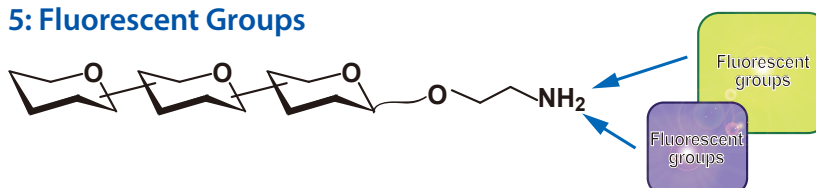
Removal of autoantibodies / viruses / toxins and purification of antibody drugs.

Application 4: Click Chemistry



Convenient synthesis of sugar-conjugates with proteins and saccharides by click chemistry technique.

Application 5: Fluorescent Groups



Highly sensitive analysis by HPLC, bioimaging and analysis of sugar-protein as well as antigen-antibody interactions.

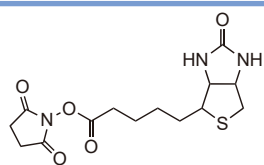
TCI products and example of possible assembled sugar-conjugates

Azido- / Amino-linked Oligosaccharides

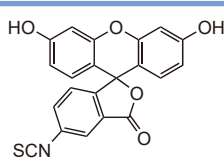
Sialyl Lewis X-Lactose Ethylazide : Neu5Ac(2-3)Galβ(1-4)[Fuca(1-3)]GlcNAcβ(1-3)Galβ(1-4)Glcβ-ethylazide	[S0922]
Sialyl Lewis X-Lactose Ethylamine : Neu5Ac(2-3)Galβ(1-4)[Fuca(1-3)]GlcNAcβ(1-3)Galβ(1-4)Glcβ-ethylamine	[S0923]
Neu5Ac(2-3)Galβ(1-4)GlcNAc-β-ethylamine	[N0949]
Neu5Ac(2-6)Galβ(1-4)GlcNAc-β-ethylamine	[N0950]
Neu5Ac(2-3)Gal-β-ethylamine	[N0947]
Neu5Ac(2-6)Gal-β-ethylamine	[N0948]
Ganglioside GM ₃ (phyto-type) : NeuAc(2-3)Galβ(1-4)Glc-ceramide	[G0422]
DisialylInonosaccharide β-ethylazide	[D4217]
HNK-1 Ethylazide : GlcA[3S]β(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)Glcβ-Ethylazide	[H1333]
GlcA[3S]β(1-3)Galβ(1-4)GlcNAcβ(1-2)Man β-ethylazide	[G0372]
GlcNAcβ(1-2)Man β-ethylazide	[G0337]
Gb ₃ -β-ethylamine : Galα(1-4)Galβ(1-4)Glc-β-ethylamine	[G0402]
Gb ₃ -β-ethylazide : Galα(1-4)Galβ(1-4)Glc-β-ethylazide	[G0403]
LacDiNAc Dimer Ethylazide : GalNAcβ(1-4)GlcNAcβ(1-3)GalNAcβ(1-4)GlcNAc-β-ethylazide	[L0237]
GalNAcβ(1-3)GlcNAc β-Ethylazide	[G0373]
A antigen PEG-trifluoroacetamide : GalNAcα(1-3)[Fuca(1-2)]Gal-β-PEG-trifluoroacetamide	[A2631]
B antigen PEG-trifluoroacetamide : Galα(1-3)[Fuca(1-2)]Gal-β-PEG-trifluoroacetamide	[B4172]
N-GlcNAc-Biotin	[G0297]
2-Azidoethyl 2-Acetamido-2-deoxy-β-D-glucopyranoside	[A2172]
2-Azidoethyl 2,3,4,6-Tetra-O-acetyl-β-D-glucopyranoside	[A2377]
2-Azidoethyl 2-Acetamido-2-deoxy-β-D-galactopyranoside	[A2627]



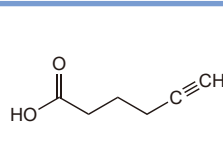
Conjugation Materials



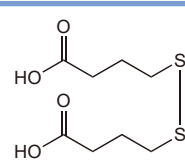
N-Succinimidyl D-Biotin
[S0491]



5-FITC (isomer I)
[F0026]



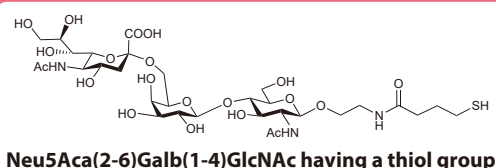
5-Hexynoic Acid
[H0882]



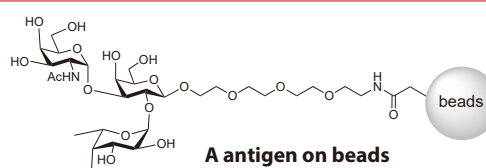
4,4'-Dithiodibutyric Acid
[D1757]



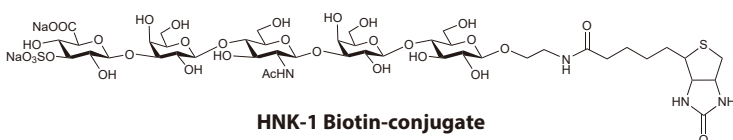
Sugar-Conjugates



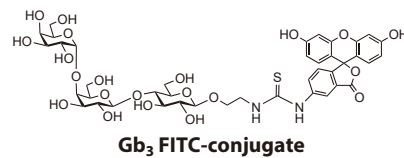
Neu5Ac(2-6)Galb(1-4)GlcNAc having a thiol group



A antigen on beads



HNK-1 Biotin-conjugate



Gb₃ FITC-conjugate

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