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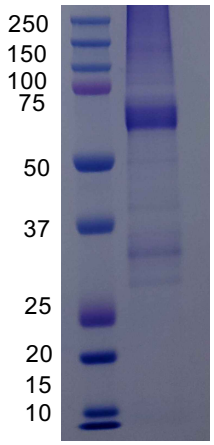
Product Name	Alpha-N-acetylgalactosaminide alpha-2,6-sialyltransferase 6 (ST6GALNAC6)
Catalog Number	#0033
Alternate Names	GalNAc alpha-2,6-sialyltransferase VI ST6GalNAc VI (ST6GalNAcVI; hST6GalNAc VI) Sialyltransferase 7F (SIAT7-F)
Substrate Specificity	Transfers the sialyl group (N-acetyl-alpha-neuraminyl or NeuAc) from CMP-NeuAc onto glycoproteins and glycolipids, forming an alpha-2,6-linkage. Produces branched type disialyl structures by transfer of a sialyl group onto the GalNAc or GlcNAc residue inside backbone core chains having a terminal sialic acid with an alpha-2,3-linkage on Gal. ST6GalNAcVI prefers glycolipids to glycoproteins, predominantly catalyzing the biosynthesis of ganglioside GD1alpha from GM1b. Besides GMb1, MSGG and other glycolipids, it shows activity towards sialyl Lc4Cer generating disialyl Lc4Cer, which can lead to the synthesis of disialyl Lewis a (Le(a)), suggested to be a cancer-associated antigen. Also has activity toward GD1a and GT1b, and can generate DSGG (disialylgalactosylgloboside) from MSGG (monosialylgalactosylgloboside).
References	Furikawa, K., Okajima, T., Tsuchida, A., and Furukawa, K. (2014) 'ST6N-acetylgalactosaminide Alpha-2,6-sialyltransferqase 5,6 (ST6GALNAC5,6) in Handbook of Glycosyltransferases and Related Genes, 2nd edition.
Expression Host	HEK293
Species of expressed protein	Human
Gene ID	30815
Protein RefSeq	NP_778204.1
Uniprot	Q969X2
Region Expressed	AA 33-333
Expressed Protein Sequence	REMSSNKEQRSAVFVILFALITILILYSSNSANEVFHYGSLRGRSRRPVNLKKWSITDGYVPIL GNKTLPSRCHQCVIVSSSSHLLGTKLGPEIERAECTIRMNDAPTTGYSADVGNKTTYRVVAH SSVFRVLRRPQEFVNRTPETVFIFWGPPSKMQKPQGSLVRVIQRAGLVFPNMEAYAVSPGR MRQFDDLFRGETGKDREKSHSWLSTGWFTMVIAVELCDHVHVYGMVPPNYCSQRPRLQR MPYHYYEPKGPDECVTYIQNEHSRKGNHHRFITEKRVFSSWAQLYGITFSHPSWT
Tag(s)	N-terminal 6xHis, GFP
Specific Activity	
Purity (%)	>95%, by SDS-PAGE as visualized by Coomassie Blue Staining
Formulation	Supplied as a 0.2µm filtered solution in 20mM HEPES pH 7.0 and 100mM NaCl buffer, with 10% Glycerol and 0.05 % NaN_3 as preservative.
Concentration	1 mg/ml
SDS-Page Size	

SDS-PAGE image



Activity	Measured by the ability to transfer the sugar from CMP-Neu5Ac and generate CMP
Assay Buffer	0.1 M sodium cacodylate buffer pH 6.0, 10 mM MgCl2, 2 mM CaCl2, 0.5 % Triton CF-55
Donor Substrate	CMP-Neu5Ac (300 μM, Nacalai Tesque Inc.)
Acceptor Substate	GM1b
Coupling Enzyme Detection Kit	CMP-Glo™ Glycosyltransferase Assay (Promega)
Assay Steps Std Curve	Prepare 10ml reaction mixture containing 50mM MES (pH6.5), CMP-Neu5Ac (300mM) as Follow protocol for "Generating a Standard Curve for CMP" in the CMP-Glo™ Glycosyltransferase Assay Technical Manual (Promega)
Specific Actifity calc	Specific Activity (pmol/min/ug)= [CMP released*(nmol) x (1000 pmol/nmol)] / [Incubation time (min) x amount of enzyme (ug)], Specific Activity was calculated using the standard curve plotted in GraphPad Prism 6 (GraphPad Software)
Shipping conditions	This product is shipped as 0.2μm filtered product on dry ice. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage cond 6 months	6 months if stored at -80C. Avoid repeated freeze thaws.