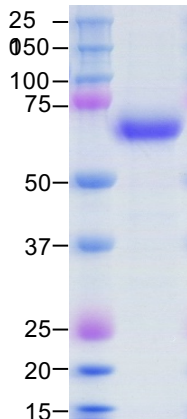


Product Name	Recombinant Human CMP-N-acetylneuraminate-beta-galactosamide-alpha-2,3-sialyltransferase 1 (ST3GAL1)
Catalog Number	#0003
Alternate Names	CMP-N-acetylneuraminate-beta-galactosamide-alpha-2,3 sialyltransferase1; sialyltransferase 4A (beta-galactoside alpha-2,3-sialyltransferase); sialyltransferase 4A (beta-galactosidase alpha-2,3-sialyltransferase); Gal-beta-1,3-GalNAc-alpha-2,3-sialyltransferase; SIAT4-A; ST3GalI; alpha 2,3-ST 1; beta-galactoside alpha-2,3-sialyltransferase 1
Substrate Specificity	Human Beta-Galactoside Alpha-2,3-Sialyltransferase 1 (ST3GAL1) has a strict acceptor specificity toward type III glycans (Gal β 1-3GalNAc). It predominantly adds sialic acid to the core 1 O-glycan (Gal β 1-3GalNAc-Ser/Thr) which is a major core structure for mucin-type O-glycans [1].
References	References: [1] Angata, K and Fukuda, M. (2013) "ST3 Beta-Galactoside Alpha-2,3-Sialyltransferase 1 (ST3GAL1)" in Handbook of Glycosyltransferases and Related Genes, 2nd edition.
Expression Host	HEK293
Species of expressed protein	Human
Gene ID	6482
Protein RefSeq	NP_003024
Uniprot	Q11201
Region Expressed	AA 52-340
Expressed Protein Sequence	RLIKHRPCTCTHCIGQRKLSAWFDERFNQTMQPLLTAQNALLEDDTYRWWLRLQREKKPN NLNDTIKELFRVVPGNVDPMLEKRSVGCRCRAVVGNSGNLRESSYGPEIDSHDFVLRMNK APTAGFEADVGTCTHHLVYPESFRELGDNVSMILVPFKTIDLEWVVSATTTGTISHTYIPVPAK IRVKQDKILIYHPAFIKYVFDNLQGHGRYPSTGILSVIFSMHVCDEVLDLYGFGADSKGNWHH YWENNPSAGAFRKTGVHDADFESNVTATLASINKIRIFKGR
Tag(s)	N-terminal 6xHis, GFP
Specific Activity	Specific Activity is ≥ 0.95 $\mu\text{mol}/\text{min}/\text{mg}$, as measured under the conditions described below.
Purity (%)	>95%, by SDS_PAGE under reducing conditions and visualized by Coomassie Blue stain.
Formulation	Supplied as a 0.2 μM filtered solution in 20mM HEPES and 100mM NaCl buffer, pH 7.0, with 10% Glycerol and 0.05 % NaN ₃ as preservative.
Concentration	1 $\mu\text{g}/\mu\text{l}$
SDS-Page Size	~70kDa
SDS-PAGE image	

Activity Measured by the ability to transfer the sugar from CMP-Neu5Ac and generate CMP

Assay Buffer	50mM MES, pH 6.5
Donor Substrate	CMP-Neu5Ac (300 μ M, Nacalai Tesque Inc.)
Acceptor Substate	Gal-b1,3-GalNAc (1.2 mM, Dextra)
Detection Kit	CMP-Glo™ Glycosyltransferase Assay (Promega)
Assay Steps	<ol style="list-style-type: none"> 1) Prepare 10μl reaction mixture containing 50mM MES (pH6.5), CMP-Neu5Ac (300 μM) as donor and Gal-β1,3-GalNAc (1.2mM) as acceptor and purified GFP-ST3GAL1 in a microfuge tube. 2) Incubate at 37C° for 30 min. 3) Put the sample on ice immediately and then transfer 5 μl of reaction mixture into 384-well assay plates and add equal volume of CMP Detection Reagent (5μL) 4) Incubate for 60 min at room temperature and read the plate using a GloMax Multi Detection System plate reader (Promega)
Std Curve	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 0.2 μ m 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.