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Product Information

Beta-galactoside alpha-2,6-sialyltransferase 1
human, recombinant, expressed in HEK 293 cells

Catalog Number **SAE0090**
Storage Temperature –20 °C

EC 2.4.99.1
Synonyms: α2,6-ST 1, CMP-N-acetylneuraminate-β-galactosamide-α-2,6-sialyltransferase 1, B-cell antigen CD75, ST6Gal I, ST6GalI, Sialyltransferase 1

Product Description

β-galactoside α(2→6) sialyltransferase 1 (ST6Gal I) catalyzes the transfer of CMP-N-acetyl-neuraminate (CMP-sialic acid, CMP-NANA) to the β-D-galactosyl-1,4-N-acetyl-D-glucosaminyl termini on glycoproteins. Sialic acids are distributed in a variety of glycolipids and glycoproteins.[1] The sialic acid that is added to a galactose (Gal) can be bound either to the hydroxyl attached to carbon-3 of Gal to form an α(2→3) glycosidic linkage, or to the hydroxyl group attached to carbon-6 to form an α(2→6) glycosidic linkage.[1] ST6Gal I generates an α(2→6) linkage of sialic acid on the non-reducing, terminal Galβ1→4GlcNAc residues of oligosaccharides and glycoconjugates.[2] Terminal sialylation has been shown to decrease Fcγ receptor binding and increase anti-inflammatory activity,[3] as well as antibody-dependent cellular cytotoxicity in different studies by reduced binding of sialylated antibody towards FcγRIIIa.[4-5]

Uniprot: P15907

This product is supplied as a powder, lyophilized from 0.22 μm-filtered solution in 50 mM MES, pH 6.0. The recombinant human ST6Gal I is expressed in human HEK 293 cells as a glycoprotein with a calculated molecular mass of 43.5 kDa (amino acids 27–406). The DTT-reduced protein migrates as a ~50 kDa polypeptide on SDS-PAGE because of glycosylation.

This protein is produced in human cells, with no serum. The human cell expression system allows human-like glycosylation and folding, and often supports higher specific activity of the protein. The protein is produced with no artificial tags.

Purity: ≥95% (SDS-PAGE)

Specific activity: ≥300 units/mg ST6Gal I

Unit definition: One unit is defined as the amount of enzyme required to transfer 1.0 nanomole of sialic acid from CMP-NANA to asialofetuin per minute at pH 6.0 and 37 °C.

The recombinant ST6Gal I product can be used to study the mode of action of the enzyme, as well as its potential inhibitors. It can also be used as a glycoengineering tool to modify glycoproteins *in vitro*.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Briefly centrifuge the vial before opening. Reconstitute in water to a concentration of 0.1 mg/mL. **Do not vortex**. This solution can be stored at 2-8 °C for up to 1 week. For extended storage, it is recommended to store in working aliquots at -20 °C.

Storage/Stability

Store the lyophilized product at –20 °C. The product is stable for at least 2 years as supplied.

References

1. Ogata, M. *et al.*, *BMC Biotechnol.*, **9**, 54 (2009).
2. Weinstein, J. *et al.*, *J. Biol. Chem.*, **257(22)**, 13835-13844 (1982).
3. Kaneko, Y. *et al.*, *Science*, **313(5787)**, 670-673 (2006).
4. Naso, M.F. *et al.*, *MAbs*, **2(5)**, 519-527 (2010).
5. Scallon, B.J. *et al.*, *Mol. Immunol.*, **44(7)**, 1524-1534 (2007).

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