SANTA CRUZ BIOTECHNOLOGY, INC.

Sialyltransferase 7C siRNA (h): sc-63018

BACKGROUND

Sialyltransferases transfer sialic acid to nascent oligosaccharides and are specific for a particular sugar substrate. Usually, sialyltransferases add sialic acid to the terminal portions of the sialylated glycolipids (gangliosides) or to the N- or O-linked sugar chains of glycoproteins. Sialyltransferase 7C (ST6GalNAc III, ST6GALNAC3) is a 305 amino acid member of the glycosyltransferase 29 family. Sialyltransferase 7C is involved in the biosynthesis of ganglioside GD1A from GM1B. Sialyltransferase 7C accomplishes this by transferring CMP-NeuAc with an α-2,6-linkage to GalNAc residue on NeuAc-α-2,3-Gal-β-1,3-GalNAc of glycoproteins and glycolipids. Sialyltransferase 7C has been determined to be more efficient at modifying glycolipids than glycoproteins. Sialyltransferase 7C is a single-pass type II membrane protein found on the membrane of the Golgi apparatus.

REFERENCES

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2. Clark, H.F., et al. 2003. The secreted protein discovery initiative (SPDI), a large-scale effort to identify novel human secreted and transmembrane proteins: a bioinformatics assessment. Genome Res. 13: 2265-2270.
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4. Plath, C., et al. 2006. Assaying sialyltransferase activity with surface plasmon resonance. Chembiochem 7: 1226-1230.
5. Seko, A., et al. 2009. Polyoxometalates as effective inhibitors for sialyl- and sulfotransferases. J. Inorg. Biochem. 103: 1061-1066.
6. Oh, T.J., et al. 2011. Enzymatic synthesis of vancomycin derivatives using galactosyltransferase and sialyltransferase. J. Antibiot. 64: 103-109.
7. Bouanene, H., et al. 2011. Correlation between heterogeneous expression of sialyltransferases and MUC16 in ovarian tumor tissues. Onkologie 34: 165-169.
8. Suzuki, O., et al. 2011. Adult onset cardiac dilatation in a transgenic mouse line with Galβ1,3GalNAc α2,3-sialyltransferase II (ST3Gal-II) transgenes: a new model for dilated cardiomyopathy. Proc. Jpn. Acad., Ser. B, Phys. Biol. Sci. 87: 550-562.

CHROMOSOMAL LOCATION

Genetic locus: ST6GALNAC3 (human) mapping to 1p31.1.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

Sialyltransferase 7C siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Sialyltransferase 7C shRNA Plasmid (h): sc-63018-SH and Sialyltransferase 7C shRNA (h) Lentiviral Particles: sc-63018-V as alternate gene silencing products.

For independent verification of Sialyltransferase 7C (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-63018A, sc-63018B and sc-63018C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Sialyltransferase 7C siRNA (h) is recommended for the inhibition of Sialyltransferase 7C expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Sialyltransferase 7C gene expression knockdown using RT-PCR Primer: Sialyltransferase 7C (h)-PR: sc-63018-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.