SANTA CRUZ BIOTECHNOLOGY, INC.

ST8Sia II siRNA (h): sc-89953

BACKGROUND

ST8Sia II (ST8 α-N-acetyl-neuraminide α-2,8-sialyltransferase II), also known as STX (sialyltransferase X) or SIAT8B, is a 375 amino acid single-pass type II membrane protein that localizes to the membrane of the Golgi apparatus. Expressed in adult heart and thymus, as well as in fetal kidney, brain and heart, ST8Sia II functions to catalyze the transfer of sialic acid to N-linked glycoproteins and oligosaccharides. More specifically, ST8Sia II uses CMP-sialic acid as a donor to transfer sialic acid, via α-2,8-linkages, to the α-2,6-linked and α-2,3-linked sialic acid residues of N-glycans. Additionally, ST8Sia II is thought to be involved in the expression of polysialic acid (PSA), an important regulator of neuronal plasticity. Defects in the gene encoding ST8Sia II may be associated with schizophrenia and tumorigenesis.

REFERENCES

1. Kojima, N., et al. 1996. Characterization of mouse ST8Sia II (STX) as a neural cell adhesion molecule-specific polysialic acid synthase. Requirement of core α-1,6-linked fucose and a poly-peptide chain for polysialylation. J. Biol. Chem. 271: 19457-19463.
2. Close, B.E. and Colley, K.J. 1998. *In vivo* autopolysialylation and localization of the polysialyltransferases PST and STX. J. Biol. Chem. 273: 34586-34593.
3. Angata, K., et al. 2000. Differential biosynthesis of polysialic acid on neural cell adhesion molecule (NCAM) and oligosaccharide acceptors by three distinct α-2,8-sialyltransferases, ST8Sia IV (PST), ST8Sia II (STX), and ST8Sia III. J. Biol. Chem. 275: 18594-18601.
4. Close, B.E., et al. 2001. The polysialyltransferase ST8Sia II/STX: posttranslational processing and role of autopolysialylation in the polysialylation of neural cell adhesion molecule. Glycobiology 11: 997-1008.
5. Angata, K., et al. 2002. ST8Sia II and ST8Sia IV polysialyltransferases exhibit marked differences in utilizing various acceptors containing oligosialic acid and short polysialic acid. The basis for cooperative polysialylation by two enzymes. J. Biol. Chem. 277: 36808-36817.

CHROMOSOMAL LOCATION

Genetic locus: ST8SIA2 (human) mapping to 15q26.1.

PRODUCT

ST8Sia II siRNA (h) is a pool of 2 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 ST8Sia II shRNA Plasmid (h): sc-89953-SH and ST8Sia II shRNA (h) Lentiviral Particles: sc-89953-V as alternate gene silencing products.

For independent verification of ST8Sia II (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-89953A and sc-89953B.

PROTOCOLS

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

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

ST8Sia II siRNA (h) is recommended for the inhibition of ST8Sia II 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.

GENE EXPRESSION MONITORING

ST8Sia II (B-12): sc-390223 is recommended as a control antibody for monitoring of ST8Sia II gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ST8Sia II gene expression knockdown using RT-PCR Primer: ST8Sia II (h)-PR: sc-89953-PR (20 µl, 447 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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