SANTA CRUZ BIOTECHNOLOGY, INC.

GalNAc4ST-1 siRNA (h): sc-60691

BACKGROUND

Sulfotransferase enzymes catalyze the sulfate conjugation of many hormones, neurotransmitters, drugs and xenobiotic compounds. These cytosolic enzymes differ in their tissue distributions and substrate specificity, but the gene structure (number and length of exons) is similar among family members. GalNAc-4-sulfotransferase (GalNAc4ST-1), also designated carbohydrate sulfotransferase 8 (CHST8), is a member of a family of sulfotransferases that includes chondroitin-4-sulfotransferases-1-3, HNK-1 sulfotransferase and dermatan-4-sulfotransferase-1. The GalNAc4ST-1 protein displays 28% identity to chondroitin-4-sulfotransferase-1 (C4ST-1), 26% to chondroitin 4-sulfotransferase-2 (C4ST-2) and 23% identity to HNK-1ST. GalNAc4ST-1 transfers sulfate to the C-4 hydroxy group of nonreducing terminal GalNAc residues and shows higher expression in regions of the brain such as the pituitary and cerebellum.

REFERENCES

1. Xia, G., et al. 2000. Molecular cloning and expression of the pituitary glycoprotein hormone N-acetylgalactosamine-4-O-sulfotransferase. J. Biol. Chem. 275: 38402-38409.
2. Okuda, T., et al. 2003. Mouse N-acetylgalactosamine-4-sulfotransferases-1 and -2. Molecular cloning, expression, chromosomal mapping and detection of their activity with GalNAcβ1-4GlcNAcβ1-octyl. J. Biochem. 134: 111-120.
3. Baenziger, J.U. 2003. Glycoprotein hormone GalNAc-4-sulfotransferase. Biochem. Soc. Trans. 31: 326-330.
4. Boregowda, R.K., et al. 2005. Differential expression and enzymatic properties of GalNAc-4-sulfotransferase-1 and GalNAc-4-sulfotransferase-2. Glycobiology 15: 1349-1358.
5. Barret, A., et al. 2005. Glyco-sylation-related gene expression in prion diseases: PrPSc accumulation in scrapie infected GT1 cells depends on β-1,4-linked GalNAc-4-SO4 hyposulfation. J. Biol. Chem. 280: 10516-10523.

CHROMOSOMAL LOCATION

Genetic locus: CHST8 (human) mapping to 19q13.11.

PRODUCT

GalNAc4ST-1 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 GalNAc4ST-1 shRNA Plasmid (h): sc-60691-SH and GalNAc4ST-1 shRNA (h) Lentiviral Particles: sc-60691-V as alternate gene silencing products.

For independent verification of GalNAc4ST-1 (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-60691A, sc-60691B and sc-60691C.

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

GalNAc4ST-1 siRNA (h) is recommended for the inhibition of GalNAc4ST-1 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 GalNAc4ST-1 gene expression knockdown using RT-PCR Primer: GalNAc4ST-1 (h)-PR: sc-60691-PR (20 µl). 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.