SANTA CRUZ BIOTECHNOLOGY, INC.

HNK-1ST siRNA (m): sc-60795

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 specificities. HNK-1ST, also designated carbohydrate sulfotransferase 10 (CHST10), is a Golgi-associated sulfotransferase that functions in the biosynthesis of HNK-1, a neuronally expressed carbohydrate that harbors a sulfoglucuronyl residue. HNK-1ST and glucuronosyltransferase P (GLCATP) expression is necessary to form the HNK-1 carbohydrate epitope on NCAM, a cell adhesion molecule. HNK-1ST demonstrates prominent expression in adult and fetal brain and adult testis and ovary. The deduced 356 amino acid type II transmembrane protein contains three potential N-glycosylation sites and a conserved RDP sequence that is also present in other Golgi-resident sulfotransferases.

REFERENCES

1. Rollenhagen, A., et al. 2001. Immunocytological localization of the HNK-1 carbohydrate in murine cerebellum, hippocampus and spinal cord using monoclonal antibodies with different epitope specificities. J. Neurocytol. 30: 337-351.
2. Chou, D.K., et al. 2002. HNK-1 sulfotransferase null mice express glucuronyl glycoconjugates and show normal cerebellar granule neuron migration *in vivo* and *in vitro*. J. Neurochem. 82: 1239-1251.
3. Kang, H.G., et al. 2002. Molecular cloning and characterization of chondroitin-4-O-sulfotransferase-3. A novel member of the HNK-1 family of sulfotransferases. J. Biol. Chem. 277: 34766-34772.
4. Senn, C., et al. 2002. Mice deficient for the HNK-1 sulfotransferase show alterations in synaptic efficacy and spatial learning and memory. Mol. Cell. Neurosci. 20: 712-729.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 151290. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Kakuda, S., et al. 2004. Mice deficient in the HNK-1 carbohydrate exhibit impaired learning and memory. Tanpakushitsu Kakusan Koso 49: 2431-2436.
7. Kakuda, S., et al. 2005. Different acceptor specificities of two glucuronyltransferases involved in the biosynthesis of HNK-1 carbohydrate. Glycobiology 15: 203-210.
8. Tagawa, H., et al. 2005. A non-sulfated form of the HNK-1 carbohydrate is expressed in mouse kidney. J. Biol. Chem. 280: 23876-23883.
9. Kizuka, Y., et al. 2006. Physical and functional association of glucuronyltransferases and sulfotransferase involved in HNK-1 biosynthesis. J. Biol. Chem. 281: 13644-13651.

CHROMOSOMAL LOCATION

Genetic locus: Chst10 (mouse) mapping to 1 B.

PROTOCOLS

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

PRODUCT

HNK-1ST siRNA (m) 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 HNK-1ST shRNA Plasmid (m): sc-60795-SH and HNK-1ST shRNA (m) Lentiviral Particles: sc-60795-V as alternate gene silencing products.

For independent verification of HNK-1ST (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60795A, sc-60795B and sc-60795C.

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

HNK-1ST siRNA (m) is recommended for the inhibition of HNK-1ST expression in mouse 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 HNK-1ST gene expression knockdown using RT-PCR Primer: HNK-1ST (m)-PR: sc-60795-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.