SANTA CRUZ BIOTECHNOLOGY, INC.

UST siRNA (h): sc-95159

BACKGROUND

Sulfotransferase enzymes catalyze the sulfate conjugation of many hormones, neurotransmitters, drugs, and xenobiotic compounds. These enzymes differ in their tissue distributions and substrate specificities, although the gene structure (number and length of exons) is similar among family members. UST (uronyl 2-sulfotransferase), also known as DS2ST or 2OST, is a 406 amino acid member of the sulfotransferase 3 family. Localized to the golgi apparatus membrane, UST is a sulfotransferase that catalyzes the transfer of sulfate to the 2-position of uronyl residues, such as iduronyl residues in dermatan sulfate and glucuronyl residues of chondroitin sulfate. While UST has high activity with the aforementioned residues, it has no activity with desulfated N-resulfated heparin. UST is a single-pass type II membrane protein.

REFERENCES

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2. Kitagawa, H., et al. 1997. Regulation of chondroitin sulfate biosynthesis by specific sulfation: acceptor specificity of serum β-GalNAc transferase revealed by structurally defined oligosaccharides. Glycobiology 7: 531-537.
3. Kobayashi, M., et al. 1999. Molecular cloning and characterization of a human uronyl 2-sulfotransferase that sulfates iduronyl and glucuronyl residues in dermatan/chondroitin sulfate. J. Biol. Chem. 274: 10474-10480.
4. Tiedemann, K., et al. 2001. The glucuronyl C5-epimerase activity is the limiting factor in the dermatan sulfate biosynthesis. Arch. Biochem. Biophys. 391: 65-71.
5. Silbert, J.E., et al. 2002. Biosynthesis of chondroitin/dermatan sulfate. IUBMB Life 54: 177-186.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610752. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Ohtake, S., et al. 2005. Recognition of sulfation pattern of chondroitin sulfate by uronosyl 2-O-sulfotransferase. J. Biol. Chem. 280: 39115-39123.

CHROMOSOMAL LOCATION

Genetic locus: UST (human) mapping to 6q25.1.

PRODUCT

UST 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 UST shRNA Plasmid (h): sc-95159-SH and UST shRNA (h) Lentiviral Particles: sc-95159-V as alternate gene silencing products.

For independent verification of UST (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-95159A, sc-95159B and sc-95159C.

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

UST siRNA (h) is recommended for the inhibition of UST 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 UST gene expression knockdown using RT-PCR Primer: UST (h)-PR: sc-95159-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.

PROTOCOLS

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