SANTA CRUZ BIOTECHNOLOGY, INC.

CHST5 siRNA (m): sc-62119

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. Carbohydrate sulfotransferase 5 (CHST5) (also referred to as GlcNAc6ST-3 or IGn6ST) and carbohydrate sulfotransferase 6 (CHST6) (also referred to as GlcNAc6ST-5 or Cgn6ST) are predominantly expressed in the intestine and cornea, respectively. They are highly homologous and both are orthologs of the murine CHST5. CHST5 and CHST6 may be the result of gene duplication. They catalyze the transfer of sulfate to position 6 of non-reducing N-acetylglucosamine (GlcNAc) residues. CHST5 preferably mediates the sulfation of short carbohydrates and O-linked sugars of mucin-type acceptors. CHST6 mediates the sulfation of keratan in the cornea, which is important in maintaining corneal transparency.

REFERENCES

1. Iida, A., et al. 2001. Catalog of 320 single nucleotide polymorphisms (SNPs) in 20 quinone oxidoreductase and sulfotransferase genes. J. Hum. Genet. 46: 225-240.
2. Akama, T.O., et al. 2002. Enzymatic synthesis *in vitro* of the disulfated disaccharide unit of corneal keratan sulfate. J. Biol. Chem. 277: 42505-42513.
3. Seko, A., et al. 2002. Ectopic expression of a GlcNAc 6-O-sulfotransferase, GlcNAc6ST-2, in colonic mucinous adenocarcinoma. Glycobiology 12: 379-388.
4. Uchimura, K., et al. 2002. Specificities of N-acetylglucosamine-6-O-sulfotransferases in relation to L-selectin ligand synthesis and tumor-associated enzyme expression. J. Biol. Chem. 277: 3979-3984.
5. Iida, A., et al. 2002. Catalog of 77 single-nucleotide polymorphisms (SNPs) in the carbohydrate sulfotransferase 1 (CHST.and carbohydrate sulfotransferase 3 (CHST3) genes. J. Hum. Genet. 47: 14-19.
6. de Graffenried, C.L., et al. 2003. Golgi localization of carbohydrate sulfotransferases is a determinant of L-selectin ligand biosynthesis. J. Biol. Chem. 278: 40282-40295.

CHROMOSOMAL LOCATION

Genetic locus: Chst5 (mouse) mapping to 8 E1.

PRODUCT

CHST5 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 CHST5 shRNA Plasmid (m): sc-62119-SH and CHST5 shRNA (m) Lentiviral Particles: sc-62119-V as alternate gene silencing products.

For independent verification of CHST5 (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-62119A, sc-62119B and sc-62119C.

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

CHST5 siRNA (m) is recommended for the inhibition of CHST5 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 CHST5 gene expression knockdown using RT-PCR Primer: CHST5 (m)-PR: sc-62119-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.