SANTA CRUZ BIOTECHNOLOGY, INC.

C4ST-3 siRNA (m): sc-62115

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. Chondroitin 4-O-sulfotransferase-3 (C4ST-3), also referred to as carbohydrate sulfotransferase 13 (CHST13), catalyzes the transfer of sulfate to the C-4 hydroxy group of β1,4-linked N-acetylgalactosamine (GalNAc) internal residues in chondroitin. This sulfation is required for proper chondroitin sulfate localization, modulation of distinct signaling pathways, and cartilage growth plate morphogenesis. C4ST-3 shares 45% identity with C4ST-1 but has a more restricted pattern of expression (liver and kidney) which suggests that they play different roles *in vivo*.

REFERENCES

1. Hiraoka, N., et al. 2000. Molecular cloning and expression of two distinct human chondroitin 4-O-sulfotransferases that belong to the HNK-1 sulfotransferase gene family. J. Biol. Chem. 275: 20188-20196.
2. 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.
3. Baenziger, J.U. 2003. Glycoprotein hormone GalNAc-4-sulphotransferase. Biochem. Soc. Trans. 31: 326-330.
4. Sato, T., et al. 2003. Differential roles of two N-acetylgalactosaminyltransferases, CSGalNAcT-1, and a novel enzyme, CSGalNAcT-2. Initiation and elongation in synthesis of chondroitin sulfate. J. Biol. Chem. 278: 3063-3071.
5. Mikami, T., et al. 2003. Specificities of three distinct human chondroitin/dermatan N-acetylgalactosamine 4-O-sulfotransferases demonstrated using partially desulfated dermatan sulfate as an acceptor: implication of differential roles in dermatan sulfate biosynthesis. J. Biol. Chem. 278: 36115-36127.
6. Yusa, A., et al. 2005. N-linked oligosaccharides are required to produce and stabilize the active form of chondroitin 4-sulphotransferase-1. Biochem. J. 388: 115-121.

CHROMOSOMAL LOCATION

Genetic locus: Chst13 (mouse) mapping to 6 D1.

PRODUCT

C4ST-3 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 C4ST-3 shRNA Plasmid (m): sc-62115-SH and C4ST-3 shRNA (m) Lentiviral Particles: sc-62115-V as alternate gene silencing products.

For independent verification of C4ST-3 (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-62115A, sc-62115B and sc-62115C.

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

C4ST-3 siRNA (m) is recommended for the inhibition of C4ST-3 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 C4ST-3 gene expression knockdown using RT-PCR Primer: C4ST-3 (m)-PR: sc-62115-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.