SANTA CRUZ BIOTECHNOLOGY, INC.

GAL3ST3 siRNA (h): sc-96643

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. GAL3ST3 (galactose-3-O-sulfotransferase 3), also known as GAL3ST2 (galactose-3-O-sulfotransferase 2), is a 431 amino acid single-pass type II membrane protein that localizes to the Golgi apparatus. A member of the galactose-3-O-sulfotransferase family, GAL3ST3 catalyzes sulfonation by transferring a sulfate group to the 3' position of non-reducing β-galactosyl residues in N-glycans and core2-branched O-glycans. GAL3ST3 is highly expressed in thyroid, brain, kidney, heart and spinal cord, and utilizes magnesium as a cofactor. GAL3ST3 is encoded by gene located on human chromosome 11q13.1 and mouse chromosome 19 A.

REFERENCES

1. Bai, X., et al. 2001. Enhanced 3-O-sulfation of galactose in Asn-linked glycans and *Maackia amurensis* lectin binding in a new Chinese hamster ovary cell line. Glycobiology 11: 621-632.
2. Suzuki, A., et al. 2001. Molecular cloning and expression of a novel human β-Gal-3-O-sulfotransferase that acts preferentially on N-acetyllactosamine in N- and O-glycans. J. Biol. Chem. 276: 24388-24395.
3. El-Fasakhany, F.M., et al. 2001. A novel human Gal-3-O-sulfotransferase: molecular cloning, characterization, and its implications in biosynthesis of (SO_4-3)Galβ1-4(Fucα1-3) GlcNAc. J. Biol. Chem. 276: 26988-26994.
4. 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.

CHROMOSOMAL LOCATION

Genetic locus: GAL3ST3 (human) mapping to 11q13.1.

PRODUCT

GAL3ST3 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 GAL3ST3 shRNA Plasmid (h): sc-96643-SH and GAL3ST3 shRNA (h) Lentiviral Particles: sc-96643-V as alternate gene silencing products.

For independent verification of GAL3ST3 (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-96643A, sc-96643B and sc-96643C.

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

GAL3ST3 siRNA (h) is recommended for the inhibition of GAL3ST3 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 GAL3ST3 gene expression knockdown using RT-PCR Primer: GAL3ST3 (h)-PR: sc-96643-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Shibata, T.K., et al. 2012. Identification of mono- and disulfated N-acetyllactosaminyl oligosaccharide structures as epitopes specifically recognized by humanized monoclonal antibody HMOCC-1 raised against ovarian cancer. J. Biol. Chem. 287: 6592-6602.

RESEARCH USE

For research use only, not for use in diagnostic procedures.