SANTA CRUZ BIOTECHNOLOGY, INC.

GlcAT-S siRNA (h): sc-95380

BACKGROUND

GlcAT-S (glucuronosyltransferase-S), also known as B3GAT2 (β-1,3-glucuronyltransferase 2), is a 323 amino acid Golgi apparatus single-pass type II membrane protein that belongs to the glycosyltransferase 43 family. GlcAT-S is expressed in trachea, retina, spinal cord, hippocampus and other brain regions, and, at lower levels in testis and ovary. Existing as a homodimer, GlcAT-S is involved in the biosynthesis of CD57 (also known as HNK-1) carbohydrate epitope, a sulfated trisaccharide implicated in cellular migration and adhesion in the nervous system. GlcAT-S catalyzes the transfer of a β-1,3 linked glucuronic acid to a terminal galactose in different glycoproteins or glycolipids containing a Gal-β-1-4GlcNAc or Gal-β-1-3GlcNAc residue. It has been suggested that inflammatory cytokines, such as TNFα, stimulate GlcAT-S gene expression in brain and promote T-cell adhesion via SGPG-L-selectin recognition, a preliminary step for onset of neuroinflammation.

REFERENCES

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2. Marcos, I., et al. 2002. Cloning, characterization, and chromosome mapping of the human GlcAT-S gene. J. Hum. Genet. 47: 677-680.
3. Kakuda, S., et al. 2004. Purification and characterization of two recombinant human glucuronyltransferases involved in the biosynthesis of HNK-1 carbohydrate in *Escherichia coli*. Protein Expr. Purif. 35: 111-119.
4. Kizuka, Y., et al. 2006. Physical and functional association of glucuronyltransferases and sulfotransferase involved in HNK-1 biosynthesis. J. Biol. Chem. 281: 13644-13651.
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6. Inoue, M., et al. 2007. Distributions of glucuronyltransferases, GlcAT-P and GlcAT-S, and their target substrate, the HNK-1 carbohydrate epitope in the adult mouse brain with or without a targeted deletion of the GlcAT-P gene. Brain Res. 1179: 1-15.
7. Dasgupta, S., et al. 2007. Tumor necrosis factor-α up-regulates glucuronosyltransferase gene expression in human brain endothelial cells and promotes T-cell adhesion. J. Neurosci. Res. 85: 1086-1094.
8. Kizuka, Y., et al. 2008. Laminin-1 is a novel carrier glycoprotein for the nonsulfated HNK-1 epitope in mouse kidney. Glycobiology 18: 331-338.
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CHROMOSOMAL LOCATION

Genetic locus: B3GAT2 (human) mapping to 6q13.

PROTOCOLS

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

PRODUCT

GlcAT-S siRNA (h) is a pool of 2 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 GlcAT-S shRNA Plasmid (h): sc-95380-SH and GlcAT-S shRNA (h) Lentiviral Particles: sc-95380-V as alternate gene silencing products.

For independent verification of GlcAT-S (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-95380A and sc-95380B.

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

GlcAT-S siRNA (h) is recommended for the inhibition of GlcAT-S 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 GlcAT-S gene expression knockdown using RT-PCR Primer: GlcAT-S (h)-PR: sc-95380-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.