SANTA CRUZ BIOTECHNOLOGY, INC.

GlcAT-S shRNA (m) Lentiviral Particles: sc-145417-V

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

1. Imiya, K., et al. 2002. cDNA cloning, genomic structure and chromosomal mapping of the mouse glucuronyltransferase-S involved in the biosynthesis of the HNK-1 carbohydrate epitope. Gene 296: 29-36.
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.
5. Shiba, T., et al. 2006. Crystal structure of GlcAT-S, a human glucuronyltransferase, involved in the biosynthesis of the HNK-1 carbohydrate epitope. Proteins 65: 499-508.

CHROMOSOMAL LOCATION

Genetic locus: B3gat2 (mouse) mapping to 1 A5.

PRODUCT

GlcAT-S shRNA (m) Lentiviral Particles are concentrated, transduction-ready viral particles containing a target-specific construct that encodes a 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 µl frozen stock containing 1.0 x 10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see GlcAT-S siRNA (m): sc-145417 and GlcAT-S shRNA Plasmid (m): sc-145417-SH as alternate gene silencing products.

APPLICATIONS

GlcAT-S shRNA (m) Lentiviral Particles is recommended for the inhibition of GlcAT-S expression in mouse cells.

PROTOCOLS

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

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 µl frozen viral stock containing 1.0 x 10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GlcAT-S gene expression knockdown using RT-PCR Primer: GlcAT-S (m)-PR: sc-145417-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.