SANTA CRUZ BIOTECHNOLOGY, INC.

GnT-IVB shRNA (m) Lentiviral Particles: sc-145664-V

BACKGROUND

GnT-IVB is a 548 amino acid single-pass type II membrane protein that is also known as MGAT4B [mannosyl (α-1,3-)-glycoprotein β-1,4-N-acetylglucosaminyltransferase, isozyme B] and is localized to the membrane of the Golgi apparatus. Expressed in a variety of tissues, GnT-IVB functions as a glycosyltransferase that uses divalent metal cations to catalyze the formation of tri- and multiantennary Golgi branching structures, specifically by facilitating the transfer of N-acetylglucosamine (GlcNAc) to the core mannose residues of N-linked glycans. Via its catalytic activity, GnT-IVB plays an essential role in the production of sugar chains and may also be involved in the regulation of serum glycoproteins. Overexpression of GnT-IVB is associated with the progression of pancreatic cancer, suggesting that GnT-IVB may be associated with oncogenic transformation and metastasis. Multiple isoforms of GnT-IVB exist due to alternative splicing events.

REFERENCES

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2. Takamatsu, S., et al. 1999. Unusually high expression of N-acetylglucosaminyltransferase-IVA in human choriocarcinoma cell lines: a possible enzymatic basis of the formation of abnormal biantennary sugar chain. Cancer Res. 59: 3949-3953.
3. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604561. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Schachter, H. 2002. The role of the GlcNAcβ1,2Manα-moiety in mammalian development. Null mutations of the genes encoding UDP-N-acetylglucos-amine: α-3-D-mannoside β-1,2-N-acetylglucosaminyltransferase I and UDP-N-acetylglucosamine: α-D-mannoside β-1,2-N-acetylglucosaminyltransferase I.2 cause embryonic lethality and congenital muscular dystrophy in mice and men, respectively. Biochim. Biophys. Acta 1573: 292-300.
5. Ide, Y., et al. 2006. Aberrant expression of N-acetylglucosaminyltransferase-IVA and IVB (GnT-IVA and B) in pancreatic cancer. Biochem. Biophys. Res. Commun. 341: 478-482.
6. Oguri, S., et al. 2006. Kinetic properties and substrate specificities of two recombinant human N-acetylglucosaminyltransferase-IV isozymes. Glycoconj. J. 23: 473-480.
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CHROMOSOMAL LOCATION

Genetic locus: Mgat4b (mouse) mapping to 11 B1.3.

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.

PRODUCT

GnT-IVB 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 GnT-IVB siRNA (m): sc-145664 and GnT-IVB shRNA Plasmid (m): sc-145664-SH as alternate gene silencing products.

APPLICATIONS

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

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 GnT-IVB gene expression knockdown using RT-PCR Primer: GnT-IVB (m)-PR: sc-145664-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.

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.

PROTOCOLS

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