SANTA CRUZ BIOTECHNOLOGY, INC.

GnT-IVB siRNA (m): sc-145664

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-acetylglucosamine: 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.
7. Kudo, T., et al. 2007. N-glycan alterations are associated with drug resistance in human hepatocellular carcinoma. Mol. Cancer 6: 32.

CHROMOSOMAL LOCATION

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

PROTOCOLS

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

PRODUCT

GnT-IVB siRNA (m) is a target-specific 19-25 nt siRNA 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 GnT-IVB shRNA Plasmid (m): sc-145664-SH and GnT-IVB shRNA (m) Lentiviral Particles: sc-145664-V as alternate gene silencing 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

GnT-IVB siRNA (m) is recommended for the inhibition of GnT-IVB 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 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.

RESEARCH USE

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