SANTA CRUZ BIOTECHNOLOGY, INC.

GnT-IVB (N-13): sc-160386

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

1. Yoshida, A., et al. 1998. A novel second isoenzyme of the human UDP-N-acetylglucosamine:α1,3-D-mannoside β1,4-N-acetylglucosaminyltransferase family: cDNA cloning, expression, and chromosomal assignment. Glycoconj. J. 15: 1115-1123.
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.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: MGAT4B (human) mapping to 5q35.3; Mgat4b (mouse) mapping to 11 B1.3.

SOURCE

GnT-IVB (N-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of GnT-IVB of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-160386 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GnT-IVB (N-13) is recommended for detection of GnT-IVB of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with GnT-IVA or GnT-IVH.

Suitable for use as control antibody for GnT-IVB siRNA (h): sc-91754, GnT-IVB siRNA (m): sc-145664, GnT-IVB shRNA Plasmid (h): sc-91754-SH, GnT-IVB shRNA Plasmid (m): sc-145664-SH, GnT-IVB shRNA (h) Lentiviral Particles: sc-91754-V and GnT-IVB shRNA (m) Lentiviral Particles: sc-145664-V.

Molecular Weight of GnT-IVB: 63 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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