

# GnT-VB (A-14): sc-164500

## BACKGROUND

GnT-VB (GlcNAc-T Vb), also known as MGAT5B (mannosyl ( $\alpha$ -1,6)-glycoprotein  $\beta$ -1,6-N-acetylglucosaminyltransferase, isozyme B), GNT-IX (N-acetylglucosaminyl-transferase IX) or  $\alpha$ -1,6-mannosylglycoprotein 6- $\beta$ -N-acetylglucosaminyltransferase B, is a 792 amino acid single-pass type II membrane protein that belongs to the glycosyltransferase 18 family. Localizing to Golgi apparatus membrane, GnT-VB is predominantly expressed in brain with lower levels found in testis, spleen and thymus. GnT-VB participates in the protein glycosylation pathway and functions in the synthesis of complex cell surface N- and O-mannosyl glycans. GnT-VB also plays an important role in regulating integrin and laminin-dependent adhesion. The gene encoding GnT-VB produces five isoforms due to alternative splicing and maps to human chromosome 17q25.2 and mouse chromosome 11 E2.

## REFERENCES

1. Kaneko, M., et al. 2003. A novel  $\beta$ (1,6)-N-acetylglucosaminyltransferase V (GnT-VB)(1). FEBS Lett. 554: 515-519.
2. Inamori, K., et al. 2003. Molecular cloning and characterization of human GnT-IX, a novel  $\beta$ 1,6-N-acetylglucosaminyltransferase that is specifically expressed in the brain. J. Biol. Chem. 278: 43102-43109.
3. Inamori, K., et al. 2004. N-Acetylglucosaminyltransferase IX acts on the GlcNAc  $\beta$  1,2-Man  $\alpha$  1-Ser/Thr moiety, forming a 2,6-branched structure in brain O-mannosyl glycan. J. Biol. Chem. 279: 2337-2340.
4. Abbott, K.L., et al. 2006. Integrin-dependent neuroblastoma cell adhesion and migration on laminin is regulated by expression levels of two enzymes in the O-mannosyl-linked glycosylation pathway, PomGnT1 and GnT-Vb. Exp. Cell Res. 312: 2837-2850.
5. Lee, I., et al. 2006. N-acetylglucosaminyltransferase VB expression enhances  $\beta$ 1 integrin-dependent PC12 neurite outgrowth on laminin and collagen. J. Neurochem. 97: 947-956.
6. Zody, M.C., et al. 2006. DNA sequence of human chromosome 17 and analysis of rearrangement in the human lineage. Nature 440: 1045-1049.
7. Abbott, K.L., et al. 2008. Receptor tyrosine phosphatase  $\beta$  (RPTP $\beta$ ) activity and signaling are attenuated by glycosylation and subsequent cell surface galectin-1 binding. J. Biol. Chem. 283: 33026-33035.

## CHROMOSOMAL LOCATION

Genetic locus: MGAT5B (human) mapping to 17q25.2; Mgat5b (mouse) mapping to 11 E2.

## SOURCE

GnT-VB (A-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GnT-VB of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-164500 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GnT-VB (A-14) is recommended for detection of GnT-VB 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-V.

GnT-VB (A-14) is also recommended for detection of GnT-VB in additional species, including equine, canine and porcine.

Suitable for use as control antibody for GnT-VB siRNA (h): sc-94051, GnT-VB siRNA (m): sc-145666, GnT-VB shRNA Plasmid (h): sc-94051-SH, GnT-VB shRNA Plasmid (m): sc-145666-SH, GnT-VB shRNA (h) Lentiviral Particles: sc-94051-V and GnT-VB shRNA (m) Lentiviral Particles: sc-145666-V.

Molecular Weight of GnT-VB isoforms 1/2/3: 90/91/44 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.

## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.