SANTA CRUZ BIOTECHNOLOGY, INC.

GnT-V (3E9): sc-293276

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

UDP-N-acetylglucosamine:α mannoside β1, 6 N-acetylglucosaminyltransferase, known as GnT-V, plays a pivotal role in the processing of N-linked glycoproteins and influences cancer progression and metastasis. Expression of GnT-V in the liver is enhanced during hepatocarcinogenesis, although it is not expressed in normal liver. Gene expression of GnT-V is regulated by a transcriptional factor, which is involved in angiogenesis and invasion of tumor cells. When the formation of the product of GnT-V, GlcNAc-β1-6, is inhibited by overexpression of GnT-III, lung metastasis of melanoma cells is suppressed. Modification of glycoprotein receptors such as the receptors for epidermal growth factor and nerve growth factor by GnT-III sense transfection changes an intracellular signaling pathway, which may lead to a variety of biological alterations in tumor cells.

REFERENCES

1. Taniguchi, N., et al. 1999. Implication of N-acetylglucosaminyltransferases III and V in cancer: gene regulation and signaling mechanism. Biochim. Biophys. Acta 1455: 287-300.
2. Ito, Y., et al. 2001. Elevated expression of UDP-N-acetylglucosamine: alphamannoside β1,6 N-acetylglucosaminyltransferase is an early event in hepatocarcinogenesis. Int. J. Cancer 91: 631-637.
3. Guo, H.B., et al. 2001. Relationship between metastasis-associated phenotypes and N-glycan structure of surface glycoproteins in human hepatocarcinoma cells. J. Cancer Res. Clin. Oncol. 127: 231-236.
4. Fukuzumi, M., et al. 2001. Comparison of the expression of cell surface poly-N-acetyllactosamine-type oligosaccharides in PC-12 cells with those in its variant PC12D. Glycobiology 11: 481-494.
5. Fukuta, K., et al. 2001. The widespread effect of β 1,4-galactosyltransferase on N-glycan processing. Arch. Biochem. Biophys. 392: 79-86.

CHROMOSOMAL LOCATION

Genetic locus: MGAT5 (human) mapping to 2q21.2.

SOURCE

GnT-V (3E9) is a mouse monoclonal antibody raised against amino acids 642-739 of GnT-V of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 for detailed protocols and support products.

APPLICATIONS

GnT-V (3E9) is recommended for detection of GnT-V of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GnT-V siRNA (h): sc-40642, GnT-V shRNA Plasmid (h): sc-40642-SH and GnT-V shRNA (h) Lentiviral Particles: sc-40642-V.

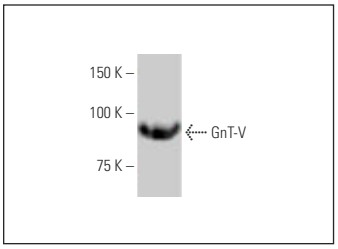
Molecular Weight of GnT-V: 85 kDa.

Positive Control: Jurkat whole cell lysate: sc-2204.

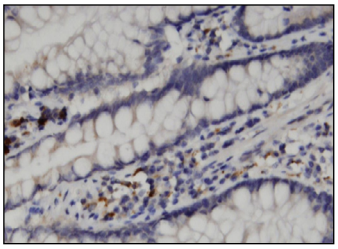
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



GnT-V (3E9): sc-293276. Western blot analysis of GnT-V expression in Jurkat whole cell lysate.



GnT-V (3E9): sc-293276. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small Intestine tissue showing membrane staining.

SELECT PRODUCT CITATIONS

1. Zhang, Z., et al. 2018. The role of extracellular matrix metalloproteinase inducer glycosylation in regulating matrix metalloproteinases in periodontitis. J. Periodontal Res. 53: 391-402.
2. Zhang, L., et al. 2021. VE-cadherin N-glycosylation modified by N-acetylglucosaminyltransferase V regulates VE-cadherin-β-catenin interaction and monocyte adhesion. Exp. Physiol. E-published.

RESEARCH USE

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