SANTA CRUZ BIOTECHNOLOGY, INC.

β3Gn-T2 (8G8): sc-134231

BACKGROUND

A family of human β1,3-galactosyltransferases (β3Gn-Ts) consists of nine members (β3Gn-T1, -T2, -T3, -T4, -T5, -T6, -T7, -T8 and -T9). β3Gn-T1 catalyzes the formation of type 1 oligosaccharides. β3GnT-2 converts lacto-N-triose II into lacto-N-tetraose and lacto-N-neotetraose and can form a heterodimer with β3Gn-T8, which, as a complex, exhibits higher enzymatic activity. Unlike the ubiquitously expressed β3Gn-T2, β3Gn-T3 is specifically expressed in colon, jejunum, stomach, esophagus, placenta and trachea, while β3Gn-T4 is mainly expressed in brain. β3Gn-T5 is essential for the biosynthesis of Lewis antigens and may play a role in gastric cancer as a result of its participation in chronic *H. pylori* infection. β3Gn-T6 may be a useful marker for distinguishing between benign adenomas and premalignant lesions. β3Gn-T7 acts as an anti-migration factor for a lung cancer cell line.

REFERENCES

1. Shiraishi, N., et al. 2001. Identification and characterization of three novel β1,3-N-acetylglucosaminyltransferases structurally related to the β1,3-galactosyltransferase family. J. Biol. Chem. 276: 3498-3507.
2. Seko, A. and Yamashita, K. 2004. β1,3-N-acetylglucosaminyltransferase-7 (β3Gn-T7) acts efficiently on keratan sulfate-related glycans. FEBS Lett. 556: 216-220.
3. Iwai, T., et al. 2005. Core 3 synthase is downregulated in colon carcinoma and profoundly suppresses the metastatic potential of carcinoma cells. Proc. Natl. Acad. Sci. USA 102: 4572-4577.
4. Deo, V.K. and Park, E.Y. 2006. Multiple cotransfection and coexpression of human β1,3-N-acetylglucosaminyltransferase with human calreticulin chaperone cDNA in a single step in insect cells. Biotechnol. Appl. Biochem. 43: 129-135.
5. Seko, A. and Yamashita, K. 2008. Activation of β1,3-N-acetylglucosaminyltransferase-2 (β3Gn-T2) by β3Gn-T8: Possible involvement of β3Gn-T8 in increasing poly-N-acetyllactosamine chains in differentiated HL-60 cells. J. Biol. Chem. 83: 33094-33100.
6. Marcos, N.T., et al. 2008. *Helicobacter pylori* induces β3GnT5 in human gastric cell lines, modulating expression of the SabA ligand sialyl-Lewis x. J. Clin. Invest. 118: 2325-2336.

CHROMOSOMAL LOCATION

Genetic locus: B3GNT2 (human) mapping to 2p15.

SOURCE

β3Gn-T2 (8G8) is a mouse monoclonal antibody raised against recombinant β3Gn-T2 protein 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.

RESEARCH USE

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

APPLICATIONS

β3Gn-T2 (8G8) is recommended for detection of β3Gn-T2 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for β3Gn-T2 siRNA (h): sc-94700, β3Gn-T2 shRNA Plasmid (h): sc-94700-SH and β3Gn-T2 shRNA (h) Lentiviral Particles: sc-94700-V.

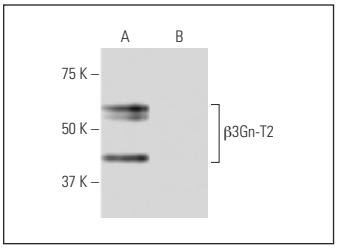
Molecular Weight of β3Gn-T2: 46 kDa.

Positive Controls: human β3Gn-T2 transfected 293T whole cell lysate.

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).

DATA



β3Gn-T2 (8G8): sc-134231. Western blot analysis of β3Gn-T2 expression in human β3Gn-T2 transfected (**A**) and non-transfected (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Wang, J., et al. 2021. High-risk HPV16 E6 activates the cGMP/PKG pathway through glycosyltransferase ST6GAL1 in cervical cancer cells. Front. Oncol. 11: 716246.

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.