SANTA CRUZ BIOTECHNOLOGY, INC.

β3Gn-T1 (T-13): sc-167002

BACKGROUND

A family of human beta 1,3-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, and 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., et al. 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., et al. 2006. Multiple co-transfection and co-expression of human β1,3-N-acetylglucosaminyltransferase with human calreticulin chaperone cDNA in a single step in insect cells. Biotechnol. Appl. Biochem. 43 (Pt. 3): 129-135.
5. Seko, A., et al. 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. 283: 33094-33100.

CHROMOSOMAL LOCATION

Genetic locus: B3GNT1 (human) mapping to 11q13.1; B3gnt1 (mouse) mapping to 19 A.

SOURCE

β3Gn-T1 (T-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of β3Gn-T1 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-167002 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

β3Gn-T1 (T-13) is recommended for detection of β3Gn-T1 of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other β3Gn-T family members. Suitable for use as control antibody for β3Gn-T1 siRNA (h): sc-96719, β3Gn-T1 siRNA (m): sc-108930, β3Gn-T1 shRNA Plasmid (h): sc-96719-SH, β3Gn-T1 shRNA Plasmid (m): sc-108930-SH, β3Gn-T1 shRNA (h) Lentiviral Particles: sc-96719-V and β3Gn-T1 shRNA (m) Lentiviral Particles: sc-108930-V.

β3Gn-T1 (T-13) is also recommended for detection of β3Gn-T1 in additional species, including canine, bovine and porcine.

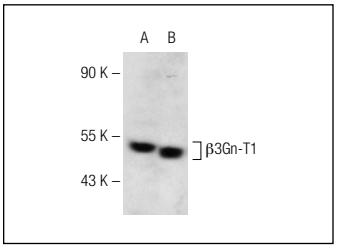
Molecular Weight of β3Gn-T1: 47 kDa.

Positive Controls: NAMALWA cell lysate: sc-2234 or LNCaP cell lysate: sc-2231.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



β3Gn-T1 (T-13): sc-167002. Western blot analysis of β3Gn-T1 expression in NAMALWA (**A**) and LNCaP (**B**) whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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