SANTA CRUZ BIOTECHNOLOGY, INC.

GalNAc-T1 (N-17): sc-68491

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The UDP-N-acetyl-α-D-galactosamine:polypeptide N-acetylgalactosaminyl-transferase (GalNAc-T) family of enzymes are substrate-specific proteins that catalyze the transfer of GalNAc (N-acetylgalactosamine) to serine and threonine residues onto various proteins, thereby initiating mucin-type O-linked glycosylation in the Golgi apparatus. GalNAc-T1, also known as GALNT1 (polypeptide N-acetylgalactosaminyltransferase 1), is a ubiquitously expressed 559 amino acid single-pass type II membrane protein that localizes to the Golgi apparatus and, like other GalNAc-Ts, contains a stem region and a C-terminal ricin/lectin-like domain. GalNAc-T1 catalyzes the first reaction in O-linked oligosaccharide biosynthesis, namely the transfer of an N-acetyl-D-galactosamine residue to a protein acceptor. GalNAc-T1 uses calcium and manganese as cofactors. Due to alternative splicing events, two GalNAc-T1 isoforms are expressed.

REFERENCES

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2. Takai, S., et al. 1997. A human UDP-GalNAc: polypeptide, N-acetylgalactosaminyltransferase type 1 gene is located at the chromosomal region 18q12.1. Hum. Genet. 99: 293-294.
3. Bennett, E.P., et al. 1998. Genomic organization and chromosomal localization of three members of the UDP-N-acetylgalactosamine: polypeptide N-acetylgalactosaminyltransferase family. Glycobiology 8: 547-555.
4. Tenno, M., et al. 2002. Function of the lectin domain of polypeptide N-acetylgalactosaminyltransferase 1. Biochem. Biophys. Res. Commun. 298: 755-759.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602273. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Qiu, H., et al. 2006. Expres-sions of polypeptide: N-acetylgalactosaminyl-transferase in leukemia cell lines during 1,25-dihydroxyvitamin D3 induced differentiation. Glycoconj. J. 23: 575-584.
7. Tenno, M., et al. 2007. Function of conserved aromatic residues in the Gal/GalNAc-glycosyltransferase motif of UDP-GalNAc:polypeptide N-acetylgalactosaminyltransferase 1. FEBS J. 274: 6037-6045.
8. Tenno, M., et al. 2007. Initiation of protein O glycosylation by the polypeptide GalNAcT-1 in vascular biology and humoral immunity. Mol. Cell. Biol. 27: 8783-8796.
9. Brooks, S.A., et al. 2007. Immunolocalisation of members of the polypeptide N-acetylgalactosaminyl transferase (ppGalNAc-T) family is consistent with biologically relevant altered cell surface glycosylation in breast cancer. Acta Histochem. 109: 273-284.

CHROMOSOMAL LOCATION

Genetic locus: GALNT1 (human) mapping to 18q12.2; Galnt1 (mouse) mapping to 18 A2.

SOURCE

GalNAc-T1 (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of GalNAc-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-68491 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GalNAc-T1 (N-17) is recommended for detection of GalNAc-T1 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).

GalNAc-T1 (N-17) is also recommended for detection of GalNAc-T1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for GalNAc-T1 siRNA (h): sc-75082, GalNAc-T1 siRNA (m): sc-75083, GalNAc-T1 shRNA Plasmid (h): sc-75082-SH, GalNAc-T1 shRNA Plasmid (m): sc-75083-SH, GalNAc-T1 shRNA (h) Lentiviral Particles: sc-75082-V and GalNAc-T1 shRNA (m) Lentiviral Particles: sc-75083-V.

Molecular Weight of GalNAc-T1: 64 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 or our catalog for detailed protocols and support products.