

GalNAc-TL4 (C-16): sc-242878

BACKGROUND

The UDP-N-acetyl- α -D-galactosamine:polypeptide N-acetylgalactosaminyltransferase (GalNAc-T) family of enzymes are substrate-specific proteins that catalyze the transfer of GalNAc (N-acetylgalactosaminyl) to serine and threonine residues onto various proteins, thereby initiating mucin-type O-linked glycosylation in Golgi apparatus. GalNAc-TL4, also known as LGALS14 or polypeptide GalNAc transferase-like protein 4, is a 607 amino acid single-pass type II membrane protein belonging to the glycosyltransferase 2 family and GalNAc-T subfamily. Localizing to Golgi apparatus, GalNAc-TL4 utilizes manganese and calcium as cofactors and may assist with the transfer of N-acetyl-D-galactosamine to a serine or threonine residue on protein receptors. GalNAc-TL4 likely catalyzes the initial reaction in O-linked oligosaccharide biosynthesis and contains a ricin B-type lectin domain, which binds to GalNAc and contributes to glycopeptide specificity, and two conserved domains located in the glycosyltransferase region. The N-terminal domain, also known as domain A or GT1 motif, may be involved in manganese coordination and substrate binding while the C-terminal domain, also known as domain B or Gal/GalNAc-T motif, is likely involved in catalytic reaction and UDP-Gal binding. GalNAc-TL4 exists as two alternatively spliced isoforms.

REFERENCES

1. Porowska, H., et al. 1999. Activity of partially purified UDP-N-acetyl- α -D-galactosamine: polypeptide N-acetylgalactosaminyltransferase with different peptide acceptors. *Acta Biochim. Pol.* 46: 365-370.
2. Kumar, S., et al. 2001. Identification and initial characterization of 5,000 expressed sequenced tags (ESTs) each from adult human normal and osteoarthritic cartilage cDNA libraries. *Osteoarthr. Cartil.* 9: 641-653.
3. Schwientek, T., et al. 2002. Functional conservation of subfamilies of putative UDP-N-acetylgalactosamine:polypeptide N-acetylgalactosaminyltransferases in *Drosophila*, *Caenorhabditis elegans*, and mammals. One subfamily composed of I(2)35Aa is essential in *Drosophila*. *J. Biol. Chem.* 277: 22623-22638.
4. Argüeso, P., et al. 2003. The cell-layer- and cell-type-specific distribution of GalNAc-transferases in the ocular surface epithelia is altered during keratinization. *Invest. Ophthalmol. Vis. Sci.* 44: 86-92.
5. Gerhard, D.S., et al. 2004. The status, quality, and expansion of the NIH full-length cDNA project: the Mammalian Gene Collection (MGC). *Genome Res.* 14: 2121-2127.
6. Herr, P., et al. 2008. Regulation of TGF- β signalling by N-acetylgalactosaminyltransferase-like 1. *Development* 135: 1813-1822.

CHROMOSOMAL LOCATION

Genetic locus: GALNTL4 (human) mapping to 11p15.3; Galntl4 (mouse) mapping to 7 F1.

SOURCE

GalNAc-TL4 (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of GalNAc-TL4 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-242878 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GalNAc-TL4 (C-16) is recommended for detection of GalNAc-TL4 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 GalNAc-TL1, GalNAc-TL2 or GalNAc-TL5.

GalNAc-TL4 (C-16) is also recommended for detection of GalNAc-TL4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GalNAc-TL4 siRNA (h): sc-96270, GalNAc-TL4 siRNA (m): sc-145315, GalNAc-TL4 shRNA Plasmid (h): sc-96270-SH, GalNAc-TL4 shRNA Plasmid (m): sc-145315-SH, GalNAc-TL4 shRNA (h) Lentiviral Particles: sc-96270-V and GalNAc-TL4 shRNA (m) Lentiviral Particles: sc-145315-V.

Molecular Weight of GalNAc-TL4 isoforms 1/2: 70/10 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.