

# GalNAc-TL5 (N-16): sc-240487

## BACKGROUND

The UDP-N-acetyl- $\alpha$ -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 the Golgi apparatus. GalNAc-TL5 (polypeptide GalNAc transferase 15), also known as GALNTL5, is a 443 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 is expressed in testis. GalNAc-TL5 may assist with the transfer of an N-acetyl-D-galactosamine residue to a serine or threonine residue on protein receptors and likely catalyzes the initial reaction in O-linked oligosaccharide biosynthesis. Unlike other members of the GalNAc-T subfamily, GalNAc-TL5 does not contain a C-terminal ricin B-type lectin domain. GalNAc-TL5 contains two conserved domains located in its 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 reactions and UDP-Gal binding. GalNAc-TL5 exists as two alternatively spliced isoforms.

## REFERENCES

- Gooi, H.C., et al. 1985. Differing reactions of monoclonal anti-A antibodies with oligosaccharides related to blood group A. *J. Biol. Chem.* 260: 13218-13224.
- Hayes, B.K., et al. 1993. The biosynthesis of oligosaccharides in intact Golgi preparations from rat liver. Analysis of N-linked and O-linked glycans labeled by UDP-[6-<sup>3</sup>H]N-acetylgalactosamine. *J. Biol. Chem.* 268: 16170-16178.
- Porowska, H., et al. 1999. Activity of partially purified UDP-N-acetyl- $\alpha$ -D-galactosamine: polypeptide N-acetylgalactosaminyltransferase with different peptide acceptors. *Acta Biochim. Pol.* 46: 365-370.
- Bennett, E.P., et al. 1999. Cloning and characterization of a close homologue of human UDP-N-acetyl- $\alpha$ -D-galactosamine:Polypeptide N-acetylgalactosaminyltransferase-T3, designated GalNAc-T6. Evidence for genetic but not functional redundancy. *J. Biol. Chem.* 274: 25362-25370.
- Kim, S., et al. 2001. Intact Golgi synthesize complex branched O-linked chains on glycoside primers: evidence for the functional continuity of seven glycosyltransferases and three sugar nucleotide transporters. *Glycoconj. J.* 18: 623-633.
- Hillier, L.W., et al. 2003. The DNA sequence of human chromosome 7. *Nature* 424: 157-164.

## CHROMOSOMAL LOCATION

Genetic locus: GALNTL5 (human) mapping to 7q36.1.

## SOURCE

GalNAc-TL5 (N-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of GalNAc-TL5 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-240487 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GalNAc-TL5 (N-16) is recommended for detection of GalNAc-TL5 of 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 other GalNAc-TL family members.

Suitable for use as control antibody for GalNAc-TL5 siRNA (h): sc-89342, GalNAc-TL5 shRNA Plasmid (h): sc-89342-SH and GalNAc-TL5 shRNA (h) Lentiviral Particles: sc-89342-V.

Molecular Weight of GalNAc-TL5 isoform 1: 51 kDa.

Molecular Weight of GalNAc-TL5 isoform 2: 15 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](http://www.scbt.com) or our catalog for detailed protocols and support products.