

# GalNAc-T3 (E-17): sc-68516

## BACKGROUND

The UDP-N-acetyl- $\alpha$ -D-galactosamine:polypeptide N-acetylgalactosaminyl-transferase (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-T3, also known as GALNT3, HHS or HFTC, is a 633 amino acid single-pass type II membrane protein that localizes to the Golgi and contains one ricin B-type lectin domain. Expressed at high levels in kidney, testis, skin and pancreas, GalNAc-T3 uses manganese and calcium as cofactors to catalyze the first reaction in O-linked oligosaccharide biosynthesis, namely the transfer of an N-acetyl-D-galactosamine residue to a serine or threonine residue on a target protein. Defects in the gene encoding GalNAc-T3 are the cause of hyperphosphatemic familial tumoral calcinosis (HFTC) and hyperostosis-hyperphosphatemia syndrome (HHS). GalNAc-T3 is overexpressed in carcinoma tissue, suggesting a role in tumor development and metastasis.

## REFERENCES

- Bennett, E.P., et al. 1996. cDNA cloning and expression of a novel human UDP-N-acetyl- $\alpha$ -D-galactosamine. Polypeptide N-acetylgalactosaminyl-transferase, GalNAc-t3. *J. Biol. Chem.* 271: 17006-17012.
- Gu, C., et al. 2004. Low expression of polypeptide GalNAc N-acetylgalactosaminyl transferase-3 in lung adenocarcinoma: impact on poor prognosis and early recurrence. *Br. J. Cancer* 90: 436-442.
- Topaz, O., et al. 2004. Mutations in GALNT3, encoding a protein involved in O-linked glycosylation, cause familial tumoral calcinosis. *Nat. Genet.* 36: 579-581.
- Kato, K., et al. 2006. Polypeptide GalNAc-transferase T3 and familial tumoral calcinosis. Secretion of fibroblast growth factor 23 requires O-glycosylation. *J. Biol. Chem.* 281: 18370-18377.
- Garringer, H.J., et al. 2007. Two novel GALNT3 mutations in familial tumoral calcinosis. *Am. J. Med. Genet. A* 143A: 2390-2396.

## CHROMOSOMAL LOCATION

Genetic locus: GALNT3 (human) mapping to 2q24.3; Galnt3 (mouse) mapping to 2 C1.3.

## SOURCE

GalNAc-T3 (E-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of GalNAc-T3 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-68516 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

GalNAc-T3 (E-17) is recommended for detection of GalNAc-T3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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-T3 (E-17) is also recommended for detection of GalNAc-T3 in additional species, including bovine and porcine.

Suitable for use as control antibody for GalNAc-T3 siRNA (h): sc-75096, GalNAc-T3 siRNA (m): sc-75097, GalNAc-T3 shRNA Plasmid (h): sc-75096-SH, GalNAc-T3 shRNA Plasmid (m): sc-75097-SH, GalNAc-T3 shRNA (h) Lentiviral Particles: sc-75096-V and GalNAc-T3 shRNA (m) Lentiviral Particles: sc-75097-V.

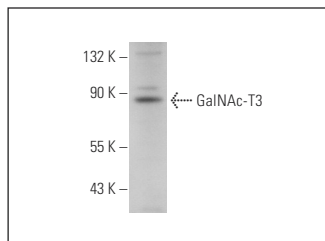
Molecular Weight of GalNAc-T3: 68 kDa.

Positive Control: A549 cell lysate: sc-2413.

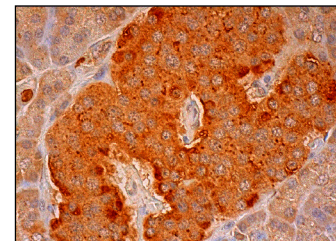
## RECOMMENDED SECONDARY REAGENTS

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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



GalNAc-T3 (E-17): sc-68516. Western blot analysis of GalNAc-T3 expression in A549 whole cell lysate.



GalNAc-T3 (E-17): sc-68516. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of exocrine glandular cells and Islets of Langerhans.

## STORAGE

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