

# $\beta$ -1,3-GalNAc-T2 (T-14): sc-138744

## BACKGROUND

$\beta$ -1,3-GalNAc-T2 ( $\beta$ -1,3-N-acetylgalactosaminyltransferase 2), also known as UDP-GalNAc: $\beta$ -1,3-N-acetylgalactosaminyltransferase 2, B3GALNT2 or B3GalNAc-T2, is a 500 amino acid single-pass type II membrane protein belonging to the glycosyltransferase 31 family. Encoded by a gene that maps to human chromosome 1q42.3,  $\beta$ -1,3-GalNAc-T2 is ubiquitously expressed, with highest levels in testis, adipose tissue, skeletal muscle and ovary.  $\beta$ -1,3-GalNAc-T2 plays a role in synthesizing a unique carbohydrate structure, GalNAc- $\beta$ -1-3GlcNAc, on N- and O-glycans.  $\beta$ -1,3-GalNAc-T2 does not exhibit galactose or galactosaminyl transferase activity toward any acceptor substrate.  $\beta$ -1,3-GalNAc-T2 contains two N-glycosylation sites, a transmembrane segment of 19 residues, and a putative stem region and catalytic domain of 479 residues.  $\beta$ -1,3-GalNAc-T2 consists of at least twelve exons and exists as two alternatively spliced isoforms.  $\beta$ -1,3-GalNAc-T2 may be linked to autism.

## REFERENCES

- Hiruma, T., Togayachi, A., Okamura, K., Sato, T., Kikuchi, N., Kwon, Y.D., Nakamura, A., Fujimura, K., Gotoh, M., Tachibana, K., Ishizuka, Y., Noce, T., Nakanishi, H. and Narimatsu, H. 2004. A novel human  $\beta$ 1,3-N-acetylgalactosaminyltransferase that synthesizes a unique carbohydrate structure, GalNAc $\beta$ 1-3GlcNAc. *J. Biol. Chem.* 279: 14087-14095.
- Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610194. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Martins, V.C., Boehm, T. and Bleul, C.C. 2008. Ltbetar signaling does not regulate Aire-dependent transcripts in medullary thymic epithelial cells. *J. Immunol.* 181: 400-407.
- Liu, Z., Youngquist, R.S., Garverick, H.A. and Antoniou, E. 2009. Molecular mechanisms regulating bovine ovarian follicular selection. *Mol. Reprod. Dev.* 76: 351-366.
- Schibler, L., Gibbs, L., Benoist-Lasselien, C., Decraene, C., Martinovic, J., Loget, P., Delezoide, A.L., Gonzales, M., Munnich, A., Jais, J.P. and Legeai-Mallet, L. 2009. New insight on FGFR3-related chondrodysplasias molecular physiopathology revealed by human chondrocyte gene expression profiling. *PLoS ONE* 4: e7633.
- van der Zwaag, B., Franke, L., Poot, M., Hochstenbach, R., Spierenburg, H.A., Vorstman, J.A., van Daalen, E., de Jonge, M.V., Verbeek, N.E., Brilstra, E.H., van 't Slot, R., Ophoff, R.A., van Es, M.A., Blauw, H.M., Veldink, J.H., Buizer-Voskamp, J.E., Beemer, F.A., van den Berg, L.H., Wijmenga, C., van Amstel, H.K., van Engeland, H., Burbach, J.P. and Staal, W.G. 2009. Gene-network analysis identifies susceptibility genes related to glycobiology in autism. *PLoS ONE* 4: e5324.
- Chiu, C., Bagnall, R.D., Ingles, J., Yeates, L., Kennerson, M., Donald, J.A., Jormakka, M., Lind, J.M. and Semsarian, C. 2010. Mutations in  $\alpha$ -actinin-2 cause hypertrophic cardiomyopathy: a genome-wide analysis. *J. Am. Coll. Cardiol.* 55: 1127-1135.

## RESEARCH USE

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

## CHROMOSOMAL LOCATION

Genetic locus: B3GALNT2 (human) mapping to 1q42.3; B3galnt2 (mouse) mapping to 13 A1.

## SOURCE

$\beta$ -1,3-GalNAc-T2 (T-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of  $\beta$ -1,3-GalNAc-T2 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-138744 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

$\beta$ -1,3-GalNAc-T2 (T-14) is recommended for detection of  $\beta$ -1,3-GalNAc-T2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

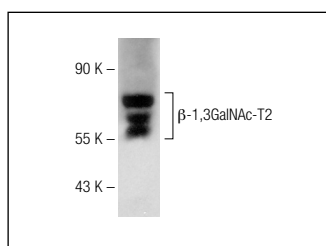
$\beta$ -1,3-GalNAc-T2 (T-14) is also recommended for detection of  $\beta$ -1,3-GalNAc-T2 in additional species, including canine and bovine.

Suitable for use as control antibody for  $\beta$ -1,3-GalNAc-T2 siRNA (h): sc-88743,  $\beta$ -1,3-GalNAc-T2 siRNA (m): sc-108214,  $\beta$ -1,3-GalNAc-T2 shRNA Plasmid (h): sc-88743-SH,  $\beta$ -1,3-GalNAc-T2 shRNA Plasmid (m): sc-108214-SH,  $\beta$ -1,3-GalNAc-T2 shRNA (h) Lentiviral Particles: sc-88743-V and  $\beta$ -1,3-GalNAc-T2 shRNA (m) Lentiviral Particles: sc-108214-V.

Molecular Weight of  $\beta$ -1,3-GalNAc-T2: 57 kDa.

Positive Controls: rat ovary extract: sc-2399.

## DATA



$\beta$ -1,3-GalNAc-T2 (T-14): sc-138744. Western blot analysis of  $\beta$ -1,3-GalNAc-T2 expression in rat ovary tissue extract.

## STORAGE

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