

β -1,3-Gal-T4 (C-20): sc-67406

BACKGROUND

β -1,3-Gal-T4 (β -3-galactosyltransferase 4), also known as Gal-T2, is a member of the β -1,3-Gal-T family of type II membrane bound glycoproteins. It is expressed in various tissues including pancreas, heart, skeletal muscle and, to a lesser extent, brain, kidney, placenta, lung, liver and some cancer cells. β -1,3-Gal-T4 localizes to the Golgi apparatus. It consists of an N-terminal cytoplasmic domain, a transmembrane domain, a hydrophobic stem region and a catalytic domain. Unlike other β -1,3-Gal-T family members, β -1,3-Gal-T4 has only one N-linked glycosylation site. Enzymatic activity of β -1,3-Gal-T4 is dependent on glycosylation at this site. Active β -1,3-Gal-T4 catalyzes the addition of galactose (from the sugar donor UDP-Gal) to the N-acetylgalactosamine residue of gangliosides GM2, GD2 and GT2 or to the glycolipid GA2.

REFERENCES

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- Martina, J.A., et al. 2000. GM1 synthase depends on N-glycosylation for enzyme activity and trafficking to the Golgi complex. *Neurochem. Res.* 25: 725-731.
- Gilbert, M., et al. 2000. Biosynthesis of ganglioside mimics in *Campylobacter jejuni* OH4384. Identification of the glycosyltransferase genes, enzymatic synthesis of model compounds, and characterization of nanomole amounts by 600 mhz (1)h and (13)c NMR analysis. *J. Biol. Chem.* 275: 3896-3906.
- Salvini, R., et al. 2001. β -1,3-Galactosyltransferase β 3Gal-T5 acts on the GlcNAc β -1 \rightarrow 3Gal β -1 \rightarrow 4GlcNAc β -1 \rightarrow R sugar chains of carcinoembryonic antigen and other N-linked glycoproteins and is downregulated in colon adenocarcinomas. *J. Biol. Chem.* 276: 3564-3573.
- Bai, X., et al. 2001. Biosynthesis of the linkage region of glycosaminoglycans: cloning and activity of galactosyltransferase II, the sixth member of the β -1,3-galactosyltransferase family (β -3GalT6). *J. Biol. Chem.* 276: 48189-48195.
- Gerken, T.A. 2004. Kinetic modeling confirms the biosynthesis of Mucin core 1 (β -Gal(1-3) α -GalNAc-O-Ser/Thr) O-glycan structures are modulated by neighboring glycosylation effects. *Biochemistry* 43: 4137-4142.

CHROMOSOMAL LOCATION

Genetic locus: B3GALT4 (human) mapping to 6p21.32; B3galt4 (mouse) mapping to 17 B1.

SOURCE

β -1,3Gal-T4 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of β -1,3Gal-T4 of human origin.

STORAGE

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

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-67406 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

β -1,3-Gal-T4 (C-20) is recommended for detection of β -1,3-Gal-T4 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).

β -1,3-Gal-T4 (C-20) is also recommended for detection of β -1,3-Gal-T4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for β -1,3-Gal-T4 siRNA (h): sc-61920, β -1,3-Gal-T4 siRNA (m): sc-61921, β -1,3-Gal-T4 shRNA Plasmid (h): sc-61920-SH, β -1,3-Gal-T4 shRNA Plasmid (m): sc-61921-SH, β -1,3-Gal-T4 shRNA (h) Lentiviral Particles: sc-61920-V and β -1,3-Gal-T4 shRNA (m) Lentiviral Particles: sc-61921-V.

Molecular Weight of β -1,3Gal-T4: 43 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.

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.