

# GAL3ST3 (E-14): sc-167949

## BACKGROUND

Sulfotransferase enzymes catalyze the sulfate conjugation of many hormones, neurotransmitters, drugs, and xenobiotic compounds. These enzymes differ in their tissue distributions and substrate specificities, although the gene structure (number and length of exons) is similar among family members. GAL3ST3 (galactose-3-O-sulfotransferase 3), also known as GAL3ST2 (galactose-3-O-sulfotransferase 2), is a 431 amino acid single-pass type II membrane protein that localizes to the Golgi apparatus. A member of the galactose-3-O-sulfotransferase family, GAL3ST3 catalyzes sulfonation by transferring a sulfate group to the 3' position of non-reducing  $\beta$ -galactosyl residues in N-glycans and core2-branched O-glycans. GAL3ST3 is highly expressed in thyroid, brain, kidney, heart and spinal cord, and utilizes magnesium as a cofactor. GAL3ST3 is encoded by gene located on human chromosome 11q13.1 and mouse chromosome 19 A.

## REFERENCES

1. Bai, X., Brown, J.R., Varki, A. and Esko, J.D. 2001. Enhanced 3-O-sulfation of galactose in Asn-linked glycans and *Maackia amurensis* lectin binding in a new Chinese hamster ovary cell line. *Glycobiology* 11: 621-632.
2. Suzuki, A., Hiraoka, N., Suzuki, M., Angata, K., Misra, A.K., McAuliffe, J., Hindsgaul, O. and Fukuda, M. 2001. Molecular cloning and expression of a novel human  $\beta$ -Gal-3-O-sulfotransferase that acts preferentially on N-acetyllactosamine in N- and O-glycans. *J. Biol. Chem.* 276: 24388-24395.
3. El-Fasakhany, F.M., Uchimura, K., Kannagi, R. and Muramatsu, T. 2001. A novel human Gal-3-O-sulfotransferase: molecular cloning, characterization, and its implications in biosynthesis of (SO(4)-3)Gal $\beta$ 1-4(Fuc $\alpha$ 1-3)GlcNAc. *J. Biol. Chem.* 276: 26988-26994.
4. Mikami, T., Mizumoto, S., Kago, N., Kitagawa, H. and Sugahara, K. 2003. Specificities of three distinct human chondroitin/dermatan N-acetylgalactosamine 4-O-sulfotransferases demonstrated using partially desulfated dermatan sulfate as an acceptor: implication of differential roles in dermatan sulfate biosynthesis. *J. Biol. Chem.* 278: 36115-36127.

## CHROMOSOMAL LOCATION

Genetic locus: GAL3ST3 (human) mapping to 11q13.1; Gal3st3 (mouse) mapping to 19 A.

## SOURCE

GAL3ST3 (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GAL3ST3 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-167949 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

GAL3ST3 (E-14) is recommended for detection of GAL3ST3 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 other GAL3ST family members.

GAL3ST3 (E-14) is also recommended for detection of GAL3ST3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GAL3ST3 siRNA (h): sc-96643, GAL3ST3 siRNA (m): sc-145308, GAL3ST3 shRNA Plasmid (h): sc-96643-SH, GAL3ST3 shRNA Plasmid (m): sc-145308-SH, GAL3ST3 shRNA (h) Lentiviral Particles: sc-96643-V and GAL3ST3 shRNA (m) Lentiviral Particles: sc-145308-V.

Molecular Weight of GAL3ST3: 49 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](http://www.scbt.com) or our catalog for detailed protocols and support products.