

C4ST-1 (T-13): sc-48969

BACKGROUND

Sulfotransferase enzymes catalyze the sulfate conjugation of many hormones, neurotransmitters, drugs and xenobiotic compounds. These cytosolic enzymes differ in their tissue distribution and substrate specificities, although the gene structure (number and length of exons) is similar among family members. Sulfotransferases are primarily expressed in liver and adrenal tissues, where they add sulfate to steroids and bile acids. C4ST-1 (chondroitin 4-sulphotransferase-1) transfers sulfate from PAPS (adenosine 3'-phosphate 5'-phosphosulphate) to position 4-O of N-acetylgalactosamine in chondroitin. This sulfation is required for proper chondroitin sulfate localization, modulation of distinct signaling pathways and cartilage growth plate morphogenesis. N-linked oligosaccharides attached to C4ST-1 contribute to the production and stability of the active form of C4ST-1.

REFERENCES

- Hiraoka, N., Nakagawa, H., Ong, E., Akama, T.O., Fukuda, M.N. and Fukuda, M. 2000. Molecular cloning and expression of two distinct human chondroitin 4-O-sulfotransferases that belong to the HNK-1 sulfotransferase gene family. *J. Biol. Chem.* 275: 20188-20196.
- Xia, G., Evers, M.R., Kang, H.G., Schachner, M. and Baenziger, J.U. 2000. Molecular cloning and expression of the pituitary glycoprotein hormone N-acetylgalactosamine-4-O-sulfotransferase. *J. Biol. Chem.* 275: 38402-38409.
- 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.
- Yamada, T., Ohtake, S., Sato, M. and Habuchi, O. 2004. Chondroitin 4-sulphotransferase-1 and chondroitin 6-sulphotransferase-1 are affected differently by uronic acid residues neighboring the acceptor GalNAc residues. *Biochem. J.* 384: 567-575.
- Kluppel, M., Wight, T.N., Chan, C., Hinek, A. and Wrana, J.L. 2005. Maintenance of chondroitin sulfation balance by chondroitin 4-sulfotransferase-1 is required for chondrocyte development and growth factor signaling during cartilage morphogenesis. *Development* 132: 3989-4003.
- Tiedemann, K., Olander, B., Eklund, E., Todorova, L., Bengtsson, M., Maccarana, M., Westergren-Thorsson, G. and Malmström, A. 2005. Regulation of the chondroitin/dermatan fine structure by transforming growth factor β 1 through effects on polymer-modifying enzymes. *Glycobiology* 15: 1277-1285.
- Yusa, A., Kitajima, K. and Habuchi, O. 2005. N-linked oligosaccharides are required to produce and stabilize the form of chondroitin 4-sulphotransferase-1. *Biochem. J.* 388: 115-121.

CHROMOSOMAL LOCATION

Genetic locus: CHST11 (human) mapping to 12q23.3; Chst11 (mouse) mapping to 10 C1.

SOURCE

C4ST-1 (T-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of C4ST-1 of human origin.

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-48969 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

C4ST-1 (T-13) is recommended for detection of C4ST-1 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).

C4ST-1 (T-13) is also recommended for detection of C4ST-1 in additional species, including avian.

Suitable for use as control antibody for C4ST-1 siRNA (h): sc-60303, C4ST-1 siRNA (m): sc-60304, C4ST-1 shRNA Plasmid (h): sc-60303-SH, C4ST-1 shRNA Plasmid (m): sc-60304-SH, C4ST-1 shRNA (h) Lentiviral Particles: sc-60303-V and C4ST-1 shRNA (m) Lentiviral Particles: sc-60304-V.

Molecular Weight of C4ST-1: 43 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203.

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 or our catalog for detailed protocols and support products.