SANTA CRUZ BIOTECHNOLOGY, INC.

C4ST-1 (L18): sc-100868



BACKGROUND

Sulfotransferase enzymes catalyze the sulfate conjugation of many hormones, neurotransmitters, drugs, and xenobiotic compounds. These cytosolic enzymes differ in their tissue distributions 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 4-0 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

- 1. Hiraoka, N., et al. 2000. Molecular cloning and expression of two distinct human chondroitin 4-O-sulfotransferases that belong to the HNK-1 sulfo-transferase gene family. J. Biol. Chem. 275: 20188-20196.
- 2. Xia, G., et al. 2000. Molecular cloning and expression of the pituitary glycoprotein hormone N-acetylgalactosamine-4-O-sulfotransferase. J. Biol. Chem. 275: 38402-38409.
- Mikami, T., et al. 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.
- 4. Yamada, T., et al. 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.
- Klüppel, M., et al. 2005. Main-tenance 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.
- 6. Tiedemann, K., et al. 2005. Regulation of the chondroitin/dermatan fine structure by transforming growth factor β 1 through effects on polymer-modifying enzymes. Glycobiology 15: 1277-1285.

CHROMOSOMAL LOCATION

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

SOURCE

C4ST-1 (L18) is a mouse monoclonal antibody raised against recombinant C4ST-1 of human origin.

PRODUCT

Each vial contains 100 μg lgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

C4ST-1 (L18) 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), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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: HeLa whole cell lysate: sc-2200, Caki-1 cell lysate: sc-2224 or Saos-2 cell lysate: sc-2235.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-lgGκ BP-HRP: sc-516102 or m-lgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA





C4ST-1 (L18): sc-100868. Western blot analysis of C4ST-1 expression in untreated HeLa (A), chemicallytreated HeLa (B) and HCT-116 (C) whole cell lysates. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409. C4ST-1 (L18): sc-100868. Western blot analysis of C4ST-1 expression in HeLa $({\rm A}),$ Caki-1 $({\rm B})$ and Saos-2 $({\rm C})$ whole cell lysates.

SELECT PRODUCT CITATIONS

1. Koike, T., et al. 2022. Altered sulfation status of FAM20C-dependent chondroitin sulfate is associated with osteosclerotic bone dysplasia. Nat. Commun. 13: 7952.

STORAGE

Store at 4° C, **D0 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.