

# C4ST-2 (D-20): sc-68011

## 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. Chondroitin 4-O-sulfotransferase-2 (C4ST-2), also referred to as carbohydrate sulfotransferase 12 (CHST12), catalyzes the transfer of sulfate groups to position four of N-acetylgalactosamine (GalNAc) residues in dermatan and chondroitin. This sulfation is required for proper chondroitin sulfate localization, modulation of distinct signaling pathways and cartilage growth plate morphogenesis. C4ST-2 may play a role that is complementary to that of C4ST-1 in chondroitin and dermatan sulfate synthesis.

## REFERENCES

- Hiraoka, N., et al. 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., et al. 2000. Molecular cloning and expression of the pituitary glycoprotein hormone N-acetylgalactosamine-4-O-sulfotransferase. *J. Biol. Chem.* 275: 38402-38409.
- Kang, H.G., et al. 2001. Molecular cloning and expression of an N-acetylgalactosamine-4-O-sulfotransferase that transfers sulfate to terminal and non-terminal  $\beta$  1,4-linked N-acetylgalactosamine. *J. Biol. Chem.* 276: 10861-10869.
- Hiraoka, N., et al. 2001. Molecular cloning and expression of two distinct human N-acetylgalactosamine 4-O-sulfotransferases that transfer sulfate to GalNAc  $\beta$  1 $\rightarrow$ 4GlcNAc  $\beta$  $\rightarrow$ R in both N- and O-glycans. *Glycobiology* 11: 495-504.
- Kang, H.G., et al. 2002. Molecular cloning and characterization of chondroitin-4-O-sulfotransferase-3. A novel member of the HNK-1 family of sulfotransferases. *J. Biol. Chem.* 277: 34766-34772.
- 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.

## CHROMOSOMAL LOCATION

Genetic locus: CHST12 (human) mapping to 7p22.3; Chst12 (mouse) mapping to 5 G2.

## SOURCE

C4ST-2 (D-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of C4ST-2 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  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-68011 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

C4ST-2 (D-20) is recommended for detection of C4ST-2 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).

C4ST-2 (D-20) is also recommended for detection of C4ST-2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for C4ST-2 siRNA (h): sc-62112, C4ST-2 siRNA (m): sc-62113, C4ST-2 shRNA Plasmid (h): sc-62112-SH, C4ST-2 shRNA Plasmid (m): sc-62113-SH, C4ST-2 shRNA (h) Lentiviral Particles: sc-62112-V and C4ST-2 shRNA (m) Lentiviral Particles: sc-62113-V.

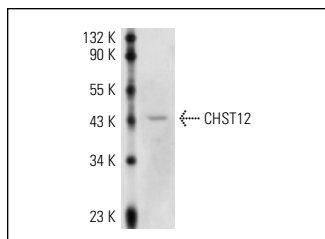
Molecular Weight of C4ST-2: 48 kDa.

Positive Controls: TE671 cell lysate: sc-2416.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



CHST12 (D-20): sc-68011. Western blot analysis of CHST12 expression in TE 671 whole cell lysate.

## RESEARCH USE

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