

CHST1 (h): 293T Lysate: sc-114756

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. Carbohydrate sulfotransferase 1 (CHST1), also referred to as KSGal6ST or KSST, is a keratan sulfate sulfotransferase. It is predominantly expressed in brain and skeletal muscle and localizes to the *trans*-Golgi network. CHST1 is responsible for mediating the sulfation of keratan in the cornea, which is important in maintaining corneal transparency. In particular, CHST1 catalyzes the transfer of sulfate groups from 3'-phosphoadenosine 5'-phosphosulfate to position six of internal or terminal galactose residues (preferentially the residues adjacent to sulfated GlcNAc) on growing keratan sulfate chains. CHST1 also contributes to the generation of L-Selectin ligands. Mutations in the CHST1 gene may play a role in macular corneal dystrophy (MCD).

REFERENCES

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2. Tu, L., et al. 1999. L-Selectin ligands expressed by human leukocytes are HECA-452 antibody-defined carbohydrate epitopes preferentially displayed by P-Selectin glycoprotein ligand-1. *J. Immunol.* 163: 5070-5078.
3. Li, X. and Tedder, T.F. 1999. CHST1 and CHST2 sulfotransferases expressed by human vascular endothelial cells: cDNA cloning, expression, and chromosomal localization. *Genomics* 55: 345-347.
4. Torii, T., et al. 2000. Sulfation of sialyl N-acetylglucosamine oligosaccharides and fetuin oligosaccharides by keratan sulfate Gal-6-sulfotransferase. *Glycobiology* 10: 203-211.
5. Li, X., et al. 2001. CHST1 and CHST2 sulfotransferase expression by vascular endothelial cells regulates shear-resistant leukocyte rolling via L-Selectin. *J. Leukoc. Biol.* 69: 565-574.
6. Uchimura, K., et al. 2002. Functional analysis of the chondroitin 6-sulfotransferase gene in relation to lymphocyte subpopulations, brain development, and oversulfated chondroitin sulfates. *J. Biol. Chem.* 277: 1443-1450.
7. Iida, A., et al. 2002. Catalog of 77 single-nucleotide polymorphisms (SNPs) in the carbohydrate sulfotransferase 1 (CHST1) and carbohydrate sulfotransferase 3 (CHST3) genes. *J. Hum. Genet.* 47: 14-19.
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9. Nishimura, M., et al. 2005. Effects of NO-1886 (Ibrolipim), a lipoprotein lipase-promoting agent, on gene induction of cytochrome P450s, carboxylesterases, and sulfotransferases in primary cultures of human hepatocytes. *Drug Metab. Pharmacokinet.* 19: 422-429.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: CHST1 (human) mapping to 11p11.2.

PRODUCT

CHST1 (h): 293T Lysate represents a lysate of human CHST1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

CHST1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive CHST1 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

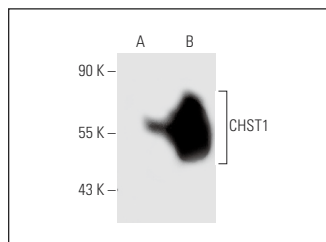
CHST1 (A-2): sc-365021 is recommended as a positive control antibody for Western Blot analysis of enhanced human CHST1 expression in CHST1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

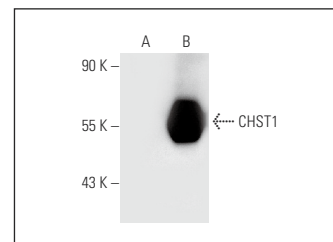
To ensure optimal results, the following support reagents are recommended:

1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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.

DATA



CHST1 (A-2): sc-365021. Western blot analysis of CHST1 expression in non-transfected: sc-117752 (A) and human CHST1 transfected: sc-114756 (B) 293T whole cell lysates.



CHST1 (E-8): sc-365022. Western blot analysis of CHST1 expression in non-transfected: sc-117752 (A) and human CHST1 transfected: sc-114756 (B) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.