



HS3ST4 (S-12): sc-107612

BACKGROUND

Heparan sulfate structures, which are responsible for executing multiple biologic activities, are generated and regulated by heparan sulfate biosynthetic enzymes. HS3ST4 (heparan sulfate (glucosamine) 3-O-sulfotransferase 4), also known as 3OST4, is a 456 amino acid single-pass type II membrane protein that localizes to the Golgi apparatus and belongs to the sulfotransferase 1 family. Expressed in a brain-specific manner, HS3ST4 functions to catalyze the transfer of a sulfuryl group to an N-unsubstituted glucosamine bound to a 2-O-sulfo iduronic acid unit on heparan sulfate, effectively playing a role in the generation of 3-O-sulfated glucosaminyl residues in heparan sulfate. The gene encoding HS3ST4 maps to human chromosome 16, which encodes over 900 genes and comprises nearly 3% of the human genome.

REFERENCES

- Shworak, N.W., Liu, J., Petros, L.M., Zhang, L., Kobayashi, M., Copeland, N.G., Jenkins, N.A. and Rosenberg, R.D. 1999. Multiple isoforms of heparan sulfate D-glucosaminyl 3-O-sulfotransferase. Isolation, characterization, and expression of human CDNAS and identification of distinct genomic loci. *J. Biol. Chem.* 274: 5170-5184.
- Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 604059. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Grobe, K., Ledin, J., Ringvall, M., Holmborn, K., Forsberg, E., Esko, J.D. and Kjellén, L. 2002. Heparan sulfate and development: differential roles of the N-acetylglucosamine N-deacetylase/N-sulfotransferase isozymes. *Biochim. Biophys. Acta* 1573: 209-215.
- Merry, C.L. and Wilson, V.A. 2002. Role of heparan sulfate-2-O-sulfotransferase in the mouse. *Biochim. Biophys. Acta* 1573: 319-327.
- Liu, J., Shriver, Z., Pope, R.M., Thorp, S.C., Duncan, M.B., Copeland, R.J., Raska, C.S., Yoshida, K., Eisenberg, R.J., Cohen, G., Linhardt, R.J. and Sasisekharan, R. 2002. Characterization of a heparan sulfate octasaccharide that binds to herpes simplex virus type 1 glycoprotein D. *J. Biol. Chem.* 277: 33456-33467.
- Tiwari, V., O'Donnell, C.D., Oh, M.J., Valyi-Nagy, T. and Shukla, D. 2005. A role for 3-O-sulfotransferase isoform-4 in assisting HSV-1 entry and spread. *Biochem. Biophys. Res. Commun.* 338: 930-937.
- Lawrence, R., Yabe, T., Hajmohammadi, S., Rhodes, J., McNeely, M., Liu, J., Lamperti, E.D., Toselli, P.A., Lech, M., Spear, P.G., Rosenberg, R.D. and Shworak, N.W. 2007. The principal neuronal gD-type 3-O-sulfotransferases and their products in central and peripheral nervous system tissues. *Matrix Biol.* 26: 442-455.
- Mochizuki, H., Yoshida, K., Shibata, Y. and Kimata, K. 2008. Tetrasulfated disaccharide unit in heparan sulfate: enzymatic formation and tissue distribution. *J. Biol. Chem.* 283: 31237-31245.

STORAGE

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

CHROMOSOMAL LOCATION

Genetic locus: HS3ST4 (human) mapping to 16p12.1.

SOURCE

HS3ST4 (S-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of HS3ST4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-107612 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HS3ST4 (S-12) is recommended for detection of HS3ST4 of 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).

Suitable for use as control antibody for HS3ST4 siRNA (h): sc-93439, HS3ST4 shRNA Plasmid (h): sc-93439-SH and HS3ST4 shRNA (h) Lentiviral Particles: sc-93439-V.

Molecular Weight of HS3ST4: 50 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 or our catalog for detailed protocols and support products.