SANTA CRUZ BIOTECHNOLOGY, INC.

HS3ST4 (C-13): sc-107610

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

1. Shworak, N.W., et al. 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.
2. 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/
3. Grobe, K., et al. 2002. Heparan sulfate and development: differential roles of the N-acetylglucosamine N-deacetylase/N-sulfotransferase isozymes. Biochim. Biophys. Acta 1573: 209-215.
4. Merry, C.L. and Wilson, V.A. 2002. Role of heparan sulfate-2-O-sulfotransferase in the mouse. Biochim. Biophys. Acta 1573: 319-327.
5. Liu, J., et al. 2002. Characterization of a heparan sulfate octasaccharide that binds to herpes simplex virus type 1 glycoprotein D. J. Biol. Chem. 277: 33456-33467.
6. Tiwari, V., et al. 2005. A role for 3-O-sulfotransferase isoform-4 in assisting HSV-1 entry and spread. Biochem. Biophys. Res. Commun. 338: 930-937.
7. Lawrence, R., et al. 2007. The principal neuronal gD-type 3-O-sulfotransferases and their products in central and peripheral nervous system tissues. Matrix Biol. 26: 442-455.
8. Mochizuki, H., et al. 2008. Tetrasulfated disaccharide unit in heparan sulfate: enzymatic formation and tissue distribution. J. Biol. Chem. 283: 31237-31245.

CHROMOSOMAL LOCATION

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

SOURCE

HS3ST4 (C-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of HS3ST4 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 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-107610 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HS3ST4 (C-13) 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).

HS3ST4 (C-13) is also recommended for detection of HS3ST4 in additional species, including canine and porcine.

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.