

HS3ST5 (B-21): sc-133676

BACKGROUND

Heparan sulfate structures, which are responsible for executing multiple biologic activities, are generated and regulated by heparan sulfate biosynthetic enzymes. HS3ST5 (heparan sulfate (glucosamine) 3-O-sulfotransferase 5), whose alternative names include 3OST5 or HS3OST5, is a 346 amino acid single-pass type II membrane protein that localizes to the Golgi apparatus membrane and may play a role in the biosynthesis of human heparan sulfate, a blood anticoagulant. As a heparan sulfate 3-O-sulfotransferase, HS3ST5 transfers sulfate from 3-prime-phosphoadenosine 5-prime phosphosulfate (PAPS) to heparan sulfate and heparin. HS3ST5 is highly expressed in skeletal muscle and fetal brain, with lower levels found in spinal cord, cerebellum, colon and adult brain. HS3ST5 may increase susceptibility to herpes simplex virus, type 1 infection by generating an antithrombin-binding site and entry receptor for the virus.

REFERENCES

- Xia, G., Chen, J., Tiwari, V., Ju, W., Li, J.P., Malmstrom, A., Shukla, D. and Liu, J. 2002. Heparan sulfate 3-O-sulfotransferase isoform 5 generates both an antithrombin-binding site and an entry receptor for herpes simplex virus, type 1. *J. Biol. Chem.* 277: 37912-37919.
- Chen, J., Duncan, M.B., Carrick, K., Pope, R.M. and Liu, J. 2003. Biosynthesis of 3-O-sulfated heparan sulfate: unique substrate specificity of heparan sulfate 3-O-sulfotransferase isoform 5. *Glycobiology* 13: 785-794.
- Mochizuki, H., Yoshida, K., Gotoh, M., Sugioka, S., Kikuchi, N., Kwon, Y.D., Tawada, A., Maeyama, K., Inaba, N., Hiruma, T., Kimata, K. and Narimatsu, H. 2003. Characterization of a heparan sulfate 3-O-sulfotransferase-5, an enzyme synthesizing a tetrasulfated disaccharide. *J. Biol. Chem.* 278: 26780-26787.
- Duncan, M.B., Chen, J., Krise, J.P. and Liu, J. 2004. The biosynthesis of anticoagulant heparan sulfate by the heparan sulfate 3-O-sulfotransferase isoform 5. *Biochim. Biophys. Acta* 1671: 34-43.
- Chen, J. and Liu, J. 2005. Characterization of the structure of antithrombin-binding heparan sulfate generated by heparan sulfate 3-O-sulfotransferase 5. *Biochim. Biophys. Acta* 1725: 190-200.
- Liu, J. and Pedersen, L.C. 2007. Anticoagulant heparan sulfate: structural specificity and biosynthesis. *Appl. Microbiol. Biotechnol.* 74: 263-272.

CHROMOSOMAL LOCATION

Genetic locus: HS3ST5 (human) mapping to 6q22.1; Hs3st5 (mouse) mapping to 10 B1.

SOURCE

HS3ST5 (B-21) is an affinity purified rabbit polyclonal antibody raised against synthetic HS3ST5 peptide 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 50 µg IgG in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

HS3ST5 (B-21) is recommended for detection of HS3ST5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 HS3ST5 siRNA (h): sc-95068, HS3ST5 siRNA (m): sc-146087, HS3ST5 shRNA Plasmid (h): sc-95068-SH, HS3ST5 shRNA Plasmid (m): sc-146087-SH, HS3ST5 shRNA (h) Lentiviral Particles: sc-95068-V and HS3ST5 shRNA (m) Lentiviral Particles: sc-146087-V.

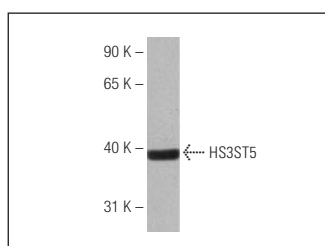
Molecular Weight of HS3ST5: 40 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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).

DATA



HS3ST5 (B-21): sc-133676. Western blot analysis of HS3ST5 expression in MCF7 whole cell lysate.

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.