

HS3ST5 siRNA (h): sc-95068

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'-phosphoadenosine 5' 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

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- Chen, J., et al. 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., et al. 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., et al. 2004. The biosynthesis of anticoagulant heparan sulfate by the heparan sulfate 3-O-sulfotransferase isoform 5. *Biochim. Biophys. Acta* 1671: 34-43.
- Chen, J., et al. 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., et al. 2007. Anticoagulant heparan sulfate: structural specificity and biosynthesis. *Appl. Microbiol. Biotechnol.* 74: 263-272.

CHROMOSOMAL LOCATION

Genetic locus: HS3ST5 (human) mapping to 6q21.

PRODUCT

HS3ST5 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HS3ST5 shRNA Plasmid (h): sc-95068-SH and HS3ST5 shRNA (h) Lentiviral Particles: sc-95068-V as alternate gene silencing products.

For independent verification of HS3ST5 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-95068A, sc-95068B and sc-95068C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

HS3ST5 siRNA (h) is recommended for the inhibition of HS3ST5 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HS3ST5 gene expression knockdown using RT-PCR Primer: HS3ST5 (h)-PR: sc-95068-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.