

# HS3ST1 siRNA (m): sc-105541

## BACKGROUND

Heparan sulfate structures, which are responsible for executing multiple biologic activities, are generated and regulated by heparan sulfate biosynthetic enzymes. HS3ST1 (heparan sulfate (glucosamine) 3-O-sulfotransferase 1), also known as 3OST or 3OST1, is a 307 amino acid protein that localizes to the lumen of the Golgi apparatus and belongs to the heparan sulfate biosynthetic enzyme family. Expressed at high levels in kidney and brain, and present at lower levels in lung, heart and placenta, HS3ST1 exhibits both anticoagulant heparan sulfate conversion activity and heparan sulfate glucosaminyl 3-O-sulfotransferase activity and specifically catalyzes the rate-limiting step in the synthesis of anticoagulant heparan. The gene encoding HS3ST1 maps to human chromosome 4, which encodes nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all of the human chromosomes.

## REFERENCES

1. Razi, N. and Lindahl, U. 1995. Biosynthesis of heparin/heparan sulfate. The D-glucosaminyl 3-O-sulfotransferase reaction: target and inhibitor saccharides. *J. Biol. Chem.* 270: 11267-11275.
2. Liu, J., et al. 1996. Purification of heparan sulfate D-glucosaminyl 3-O-sulfotransferase. *J. Biol. Chem.* 271: 27072-27082.
3. Shworak, N.W., et al. 1997. Molecular cloning and expression of mouse and human cDNAs encoding heparan sulfate D-glucosaminyl 3-O-sulfotransferase. *J. Biol. Chem.* 272: 28008-28019.
4. 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.
5. Liu, J., et al. 1999. Expression of heparan sulfate D-glucosaminyl 3-O-sulfotransferase isoforms reveals novel substrate specificities. *J. Biol. Chem.* 274: 5185-5192.

## CHROMOSOMAL LOCATION

Genetic locus: Hs3st1 (mouse) mapping to 5 B3.

## PRODUCT

HS3ST1 siRNA (m) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HS3ST1 shRNA Plasmid (m): sc-105541-SH and HS3ST1 shRNA (m) Lentiviral Particles: sc-105541-V as alternate gene silencing products.

For independent verification of HS3ST1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-105541A, sc-105541B and sc-105541C.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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

## APPLICATIONS

HS3ST1 siRNA (m) is recommended for the inhibition of HS3ST1 expression in mouse 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  $\mu$ M in 66  $\mu$ 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 HS3ST1 gene expression knockdown using RT-PCR Primer: HS3ST1 (m)-PR: sc-105541-PR (20  $\mu$ 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.