

## HS3ST2 siRNA (m): sc-146084

### BACKGROUND

Heparan sulfate structures, which are responsible for executing multiple biologic activities, are generated and regulated by heparan sulfate biosynthetic enzymes. HS3ST2 (heparan sulfate (glucosamine) 3-O-sulfotransferase 2), also known as 3OST2, is a 367 amino acid single-pass type II membrane protein that localizes to the golgi apparatus and belongs to the heparan sulfate biosynthetic enzyme family. Expressed at high levels brain and present at lower levels in placenta, lung, heart and skeletal muscle, HS3ST2 functions to catalyze the transfer of a sulfonyl group to an N-unsubstituted glucosamine linked to a 2-O-sulfo iduronic acid unit on heparan sulfate. Via its catalytic activity, HS3ST2 may play a role in the nervous system, specifically in heparan sulfate-dependent neurobiologic events. The gene encoding HS3ST2 maps to human chromosome 16p12.2, which houses over 900 genes and comprises nearly 3% of the human genome.

### 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. 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.
3. 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.
4. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. Johns Hopkins University, Baltimore, MD. MIM Number: 604056: 7/23/1999. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Miyamoto, K., et al. 2003. Methylation-associated silencing of heparan sulfate D-glucosaminyl 3-O-sulfotransferase-2 (3-OST-2) in human breast, colon, lung and pancreatic cancers. *Oncogene* 22: 274-280.
6. O'Donnell, C.D., et al. 2006. A role for heparan sulfate 3-O-sulfotransferase isoform 2 in herpes simplex virus type 1 entry and spread. *Virology* 346: 452-459.

### CHROMOSOMAL LOCATION

Genetic locus: Hs3st2 (mouse) mapping to 7 F2.

### PRODUCT

HS3ST2 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 HS3ST2 shRNA Plasmid (m): sc-146084-SH and HS3ST2 shRNA (m) Lentiviral Particles: sc-146084-V as alternate gene silencing products.

For independent verification of HS3ST2 (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-146084A, sc-146084B and sc-146084C.

### 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

HS3ST2 siRNA (m) is recommended for the inhibition of HS3ST2 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.

### GENE EXPRESSION MONITORING

HS3ST2 (G-6): sc-514361 is recommended as a control antibody for monitoring of HS3ST2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HS3ST2 gene expression knockdown using RT-PCR Primer: HS3ST2 (m)-PR: sc-146084-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.

### PROTOCOLS

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