SANTA CRUZ BIOTECHNOLOGY, INC.

HS3ST3B1 siRNA (h): sc-93963

BACKGROUND

Heparan sulfate structures, which are responsible for executing multiple biologic activities, are generated and regulated by heparan sulfate biosynthetic enzymes. HS3ST3B1 (heparan sulfate (glucosamine) 3-O-sulfotransferase 3B1), also known as 3OST3B1, is a 390 amino acid single-pass type II membrane protein that localizes to the golgi apparatus and belongs to the sulfotransferase 1 family. Expressed ubiquitously with highest expression in placenta and liver, HS3ST3B1 functions to catalyze the transfer of a sulfuryl group to an N-unsubstituted glucosamine linked to a 2-O-sulfo iduronic acid unit on heparan sulfate, and may also catalyze various other O-sulfation reactions within the body. HS3ST3B1 is encoded by a gene which maps to human chromosome 17.

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. Shukla, D., Liu, J., Blaiklock, P., Shworak, N.W., Bai, X., Esko, J.D., Cohen, G.H., Eisenberg, R.J., Rosenberg, R.D. and Spear, P.G. 1999. A novel role for 3-O-sulfated heparan sulfate in herpes simplex virus 1 entry. Cell 99: 13-22.
3. Shworak, N.W., Liu, J., Petros, L.M., Zhang, L., Kobayashi, M., Copeland, N.G., Jenkins, N.A. and Rosenberg, R.D. 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.
4. Liu, J., Shworak, N.W., Sinaÿ, P., Schwartz, J.J., Zhang, L., Fritze, L.M. and Rosenberg, R.D. 1999. Expression of heparan sulfate D-glucosaminyl 3-O-sulfotransferase isoforms reveals novel substrate specificities. J. Biol. Chem. 274: 5185-5192.
5. Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 604058. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Inoue, K., Dewar, K., Katsanis, N., Reiter, L.T., Lander, E.S., Devon, K.L., Wyman, D.W., Lupski, J.R. and Birren, B. 2001. The 1.4-Mb CMT1A duplication/HNPP deletion genomic region reveals unique genome architectural features and provides insights into the recent evolution of new genes. Genome Res. 11: 1018-1033.
7. Moon, A.F., Edavettal, S.C., Krahn, J.M., Munoz, E.M., Negishi, M., Linhardt, R.J., Liu, J. and Pedersen, L.C. 2004. Structural analysis of the sulfotransferase (3-O-sulfotransferase isoform 3) involved in the biosynthesis of an entry receptor for herpes simplex virus 1. J. Biol. Chem. 279: 45185-45193.

CHROMOSOMAL LOCATION

Genetic locus: HS3ST3B1 (human) mapping to 17p12.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

HS3ST3B1 siRNA (h) is a pool of 2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HS3ST3B1 shRNA Plasmid (h): sc-93963-SH and HS3ST3B1 shRNA (h) Lentiviral Particles: sc-93963-V as alternate gene silencing products.

For independent verification of HS3ST3B1 (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-93963A and sc-93963B.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

HS3ST3B1 siRNA (h) is recommended for the inhibition of HS3ST3B1 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 µM in 66 µl. 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 HS3ST3B1 gene expression knockdown using RT-PCR Primer: HS3ST3B1 (h)-PR: sc-93963-PR (20 µl). 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.