SANTA CRUZ BIOTECHNOLOGY, INC.

HS6ST3 siRNA (h): sc-75305

BACKGROUND

Heparan sulfate proteoglycans are long chains of heparan sulfates (HSs) which are connected to core proteins and are expressed ubiquitously on cell surfaces. HSs are thought to interact with many proteins including growth factors, morphogens and their receptors whose functions include the regulation of ligand stability. In the Golgi apparatus, HS structures are thought to be synthesized by heparan-sulfate chain modification enzymes. These HS chains are structurally modified at the cell surface by enzymes including HS6ST3 (HS 6-O-sulfotransferase 3), which catalyzes the transfer of an O-sulfate from 3'-phosphoadenosine 5'-phosphosulfate (PAPS) to an N-sulfoglucosamine residue (GlcNS) of HS, forming binding sites for proteins. HS6ST3 is a 471 amino acid protein that is localized to cell membranes and is a member of the sulfotransferase 6 family. HS6ST3 is involved in creating structures on HS chains that interact with a variety of proteins which are thought to be involved in many diverse cellular processes, including proliferation, differentiation, adhesion, migration, inflammation and blood coagulation.

REFERENCES

1. Habuchi, H., et al. 2000. The occurrence of three isoforms of heparan sulfate 6-O-sulfotransferase having different specificities for hexuronic acid adjacent to the targeted N-sulfoglucosamine. J. Biol. Chem. 275: 2859-2868.
2. Habuchi, H., et al. 2003. Biosynthesis of heparan sulphate with diverse structures and functions: two alternatively spliced forms of human heparan sulphate 6-O-sulphotransferase-2 having different expression patterns and properties. Biochem. J. 371: 131-142.
3. Smeds, E., et al. 2003. Substrate specificities of mouse heparan sulphate glucosaminyl 6-O-sulphotransferases. Biochem. J. 372: 371-380.
4. Jemth, P., et al. 2003. Oligosaccharide library-based assessment of heparan sulfate 6-O-sulfotransferase substrate specificity. J. Biol. Chem. 278: 24371-24376.

CHROMOSOMAL LOCATION

Genetic locus: HS6ST3 (human) mapping to 13q32.1.

PRODUCT

HS6ST3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HS6ST3 shRNA Plasmid (h): sc-75305-SH and HS6ST3 shRNA (h) Lentiviral Particles: sc-75305-V as alternate gene silencing products.

For independent verification of HS6ST3 (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-75305A, sc-75305B and sc-75305C.

PROTOCOLS

See our web site at 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 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

HS6ST3 siRNA (h) is recommended for the inhibition of HS6ST3 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 HS6ST3 gene expression knockdown using RT-PCR Primer: HS6ST3 (h)-PR: sc-75305-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.