SANTA CRUZ BIOTECHNOLOGY, INC.

PAPST1 siRNA (h): sc-95582

BACKGROUND

Sulfation is an important post-translational modification of proteoglycans, glycolipids and glycoproteins that requires activity of 3'-phosphoadenosine 5'-phosphosulfate (PAPS), the universal sulfate donor. PAPST1 (adenosine 3'-phospho 5'-phosphosulfate transporter 1), also known as SLC35B2 (solute carrier family 35 member B2) is a 432 amino acid type III transmembrane protein that transports PAPS from the cytosol into the Golgi apparatus. Overexpression of either PAPST1 or PAPST2, both of which are members of the nucleotide-sugar transporter family, leads to increased PAPS transport activity within the colon. In *C. elegans,* neuronal deficits correlate with reduced complexity of heparan sulfate patterns as mediated by PAPST1, suggesting that PAPST1 is required for optimum nervous system development. There are three isoforms of PAPST1 that are produced as a result of alternative splicing events.

REFERENCES

1. Kamiyama, S., et al. 2003. Molecular cloning and identification of 3'-phosphoadenosine 5'-phosphosulfate transporter. J. Biol. Chem. 278: 25958-25963.
2. Kamiyama, S., et al. 2006. Molecular cloning and characterization of a novel 3'-phosphoadenosine 5'-phosphosulfate transporter, PAPST2. J. Biol. Chem. 281: 10945-10953.
3. Shimazu, D., et al. 2006. Inhibition of D-serine accumulation in the *Xenopus* oocyte by expression of the rat ortholog of human 3'-phosphoadenosine 5'-phosphosulfate transporter gene isolated from the neocortex as D-serine modulator-1. J. Neurochem. 96: 30-42.
4. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610788. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Dick, G., et al. 2008. Overexpression of the 3'-phosphoadenosine 5'-phosphosulfate (PAPS) transporter 1 increases sulfation of chondroitin sulfate in the apical pathway of MDCK II cells. Glycobiology 18: 53-65.

CHROMOSOMAL LOCATION

Genetic locus: SLC35B2 (human) mapping to 6p21.1.

PRODUCT

PAPST1 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 PAPST1 shRNA Plasmid (h): sc-95582-SH and PAPST1 shRNA (h) Lentiviral Particles: sc-95582-V as alternate gene silencing products.

For independent verification of PAPST1 (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-95582A, sc-95582B and sc-95582C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

PAPST1 siRNA (h) is recommended for the inhibition of PAPST1 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.

GENE EXPRESSION MONITORING

PAPST1 (3H5): sc-517131 is recommended as a control antibody for monitoring of PAPST1 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-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PAPST1 gene expression knockdown using RT-PCR Primer: PAPST1 (h)-PR: sc-95582-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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