SANTA CRUZ BIOTECHNOLOGY, INC.

PAPST2 siRNA (h): sc-95515

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. PAPST2 (adenosine 3'-phospho 5'-phosphosulfate transporter 2), also known as SLC35B3 (solute carrier family 35 member B3) is a 401 amino acid Golgi apparatus protein that is predominantly expressed in human colon. 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. Knockdown of PAPST2 mRNA results in significantly reduced levels of siacyl 6-sulfo N-acteyllactosamine epitope and overall sulfate incorporation into cellular proteins. There are three isoforms of PAPST2 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. Dejima, K., et al. 2006. Essential roles of 3'-phosphoadenosine 5'-phosphosulfate synthase in embryonic and larval development of the nematode *Caenorhabditis elegans*. J. Biol. Chem. 281: 11431-11440.
4. Goda, E., et al. 2006. Identification and characterization of a novel *Drosophila* 3'-phosphoadenosine 5'-phosphosulfate transporter. J. Biol. Chem. 281: 28508-28517.
5. van den Bosch, H.M., et al. 2007. Gene expression of transporters and phase I/II metabolic enzymes in murine small intestine during fasting. BMC Genomics 8: 267.
6. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610845. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Bhattacharya, R., et al. 2009. The PAPS transporter PST-1 is required for heparan sulfation and is essential for viability and neural development in *C. elegans*. J. Cell Sci. 122: 4492-4504.
8. Sasaki, N., et al. 2009. The 3'-phosphoadenosine 5'-phosphosulfate transporters, PAPST1 and 2, contribute to the maintenance and differentiation of mouse embryonic stem cells. PLoS ONE 4: e8262.

CHROMOSOMAL LOCATION

Genetic locus: SLC35B3 (human) mapping to 6p24.3.

RESEARCH USE

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

PROTOCOLS

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

PRODUCT

PAPST2 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 PAPST2 shRNA Plasmid (h): sc-95515-SH and PAPST2 shRNA (h) Lentiviral Particles: sc-95515-V as alternate gene silencing products.

For independent verification of PAPST2 (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-95515A, sc-95515B and sc-95515C.

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

PAPST2 siRNA (h) is recommended for the inhibition of PAPST2 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 PAPST2 gene expression knockdown using RT-PCR Primer: PAPST2 (h)-PR: sc-95515-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.