SANTA CRUZ BIOTECHNOLOGY, INC.

NPT1 siRNA (m): sc-40140

BACKGROUND

NPT1, also called sodium-dependent phosphate transport protein, belongs to the organic anion transporter family, SLC17A. It is mainly expressed in the kidney transporting small organic anions such as PAH (para-aminohippurate), but it is also found in the liver and brain. NTP1 localizes to the apical membrane of renal proximal tubular cells and functions as a voltage driven organic anion/Cl-exchanger. It also plays a role in maintaining phosphate homeostasis. The expression of NPT1 is transcriptionally regulated by HNF-1α and HNF-3β. Indomethacin and salicylate inhibit NPT1-mediated PAH transport.

REFERENCES

1. Chong, S.S., et al. 1993. Molecular cloning of the cDNA encoding a human renal sodium phosphate transport protein and its assignment to chromosome 6p21.3-p23. Genomics 18: 355-359.
2. Chong, S.S., et al. 1995. Cloning, genetic mapping, and expression analysis of a mouse renal sodium-dependent phosphate cotransporter. Am. J. Physiol. 268: F1038-F1045.
3. Kos, C.H., et al. 1996. Comparative mapping of Na^+-phosphate cotransporter genes, NPT1 and NPT2, in human and rabbit. Cytogenet. Cell Genet. 75: 22-24.
4. Uchino, H., et al. 2000. p-aminohippuric acid transport at renal apical membrane mediated by human inorganic phosphate transporter NPT1. Biochem. Biophys. Res. Commun. 270: 254-259.
5. Soumounou, Y., et al. 2001. Murine and human type I Na-phosphate cotransporter genes: structure and promoter activity. Am. J. Physiol. Renal Physiol. 281: F1082-F1091.
6. SWISS-PROT/TrEMBL (Q14916). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: Slc17a1 (mouse) mapping to 13 A3.1.

PRODUCT

NPT1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NPT1 shRNA Plasmid (m): sc-40140-SH and NPT1 shRNA (m) Lentiviral Particles: sc-40140-V as alternate gene silencing products.

For independent verification of NPT1 (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-40140A, sc-40140B and sc-40140C.

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.

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

NPT1 siRNA (m) is recommended for the inhibition of NPT1 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 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 NPT1 gene expression knockdown using RT-PCR Primer: NPT1 (m)-PR: sc-40140-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.