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SANTA CRUZ BIOTECHNOLOGY, INC.

NPT2b siRNA (m): sc-150056

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Pulmonary surfactant is a lipid-rich molecule that is produced in alveoli of the lung in order to reduce surface tension and atelectasis. NPT2b (sodium-dependent phosphate transport protein 2B), also known as NaPi3b and SLC34A2 (solute carrier family 34 member 2), is a 690 amino acid multi-pass membrane protein that is highly expressed in lung and may play a role in the synthesis of surfactant in type II pneumocytes. As a type 2 sodium-dependent phosphate transporter, it is likely that NPT2b functions in the uptake of liberated phosphate from the alveolar fluid for surfactant production. Defects in the gene encoding NPT2b are the cause of pulmonary alveolar microlithiasis, a rare disease characterized by the deposition of calcium phosphate microliths in the lung. Most patients are asymptomatic, although the disease follows a long-term progressive course that leads to a slow deterioration of lung function. There are two isoforms of NPT2b that are produced as a result of alternative splicing events.

REFERENCES

1. Feild, J.A., et al. 1999. Cloning and functional characterization of a sodium-dependent phosphate transporter expressed in human lung and small intestine. Biochem. Biophys. Res. Commun. 258: 578-582.
2. Xu, H., et al. 1999. Molecular cloning, functional characterization, tissue distribution, and chromosomal localization of a human, small intestinal sodium-phosphate (Na^+-Pi) transporter (SLC34A2). Genomics 62: 281-284.
3. Xu, H., et al. 2001. Regulation of the human sodium-phosphate cotransporter NaP(i)-IIb gene promoter by epidermal growth factor. Am. J. Physiol., Cell Physiol. 280: C628-C636.
4. Homann, V., et al. 2005. Sodium-phosphate cotransporter in human salivary glands: molecular evidence for the involvement of NPT2b in acinar phosphate secretion and ductal phosphate reabsorption. Arch. Oral Biol. 50: 759-768.
5. Prié, D., et al. 2005. Recent findings in phosphate homeostasis. Curr. Opin. Nephrol. Hypertens. 14: 318-324.
6. Corut, A., et al. 2006. Mutations in SLC34A2 cause pulmonary alveolar microlithiasis and are possibly associated with testicular microlithiasis. Am. J. Hum. Genet. 79: 650-656.

CHROMOSOMAL LOCATION

Genetic locus: Slc34a2 (mouse) mapping to 5 C1.

PRODUCT

NPT2b 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 NPT2b shRNA Plasmid (m): sc-150056-SH and NPT2b shRNA (m) Lentiviral Particles: sc-150056-V as alternate gene silencing products.

For independent verification of NPT2b (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-150056A, sc-150056B and sc-150056C.

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

NPT2b siRNA (m) is recommended for the inhibition of NPT2b 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 NPT2b gene expression knockdown using RT-PCR Primer: NPT2b (m)-PR: sc-150056-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.

PROTOCOLS

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