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NHE-7 siRNA (m): sc-149956

BACKGROUND

Na⁺/H⁺ exchangers-1-8 (also designated NHE-1-8 or Na⁺/H⁺ antiporters) are integral membrane proteins that are expressed in most mammalian tissues, where they regulate intracellular pH and cell volume. NHEs mediate the transport of hydrogen (H⁺) ions out of cells in exchange for extracellular sodium (Na⁺) ions. While NHE-1 is ubiquitously expressed, the NHE isoforms 2-8 have distinct tissue- and cell type-dependent expression and inhibitory characteristics. Also, all NHE family members, except NHE-6 and NHE-7, which are located intracellularly, reside in the sarcolemmal membrane. NHE-7 interacts with tyrosinase related protein-1 (TRP1) to regulate melanosome pH and tyrosinase activity in human melanocytes.

REFERENCES

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3. Sangan, P., et al. 2002. Cloning and expression of a chloride-dependent Na⁺/H⁺ exchanger. *J. Biol. Chem.* 277: 9668-9675.
4. Goyal, S., et al. 2003. Renal expression of novel Na⁺/H⁺ exchanger isoform NHE-8. *Am. J. Physiol. Renal Physiol.* 284: 467-473.
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6. Smith, D.R., et al. 2004. The relationship between Na⁺/H⁺ exchanger expression and tyrosinase activity in human melanocytes. *Exp. Cell Res.* 298: 521-534.
7. Goyal, S., et al. 2005. Immunolocalization of NHE-8 in rat kidney. *Am. J. Physiol. Renal Physiol.* 288: 530-538.

CHROMOSOMAL LOCATION

Genetic locus: Slc9a7 (mouse) mapping to X A1.3.

PRODUCT

NHE-7 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NHE-7 shRNA Plasmid (m): sc-149956-SH and NHE-7 shRNA (m) Lentiviral Particles: sc-149956-V as alternate gene silencing products.

For independent verification of NHE-7 (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-149956A, sc-149956B and sc-149956C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

NHE-7 siRNA (m) is recommended for the inhibition of NHE-7 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 μ M in 66 μ l. 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 NHE-7 gene expression knockdown using RT-PCR Primer: NHE-7 (m)-PR: sc-149956-PR (20 μ l, 522 bp). 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.