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- Gefahrgutzuschlag
- Expressversand

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# NHE-2 siRNA (m): sc-42653

## BACKGROUND

Na<sup>+</sup>/H<sup>+</sup> exchangers-1–6 (Na<sup>+</sup>/H<sup>+</sup> antiporters, NHE-1–6) are integral membrane proteins that are expressed in most mammalian tissues where they regulate intracellular pH and cell volume. NHEs mediate the secondary active extrusion of hydrogen (H<sup>+</sup>) ions out of cells in exchange for extracellular sodium (Na<sup>+</sup>). Excluding NHE-1, which is ubiquitously expressed, the NHE isoforms 2-6 have distinct tissue- and cell type-dependent expression, and inhibitory characteristics by amiloride analogs. Human NHE-2 protein, known also as solute carrier family 9 isoform-2 (SLC9A2), is an 812 amino acid, protein that is expressed in skeletal muscle, colon, kidney, testis, prostate, ovary and small intestine.

## REFERENCES

1. Fliegel, L., et al. 1993. Cloning and analysis of the human myocardial Na<sup>+</sup>/H<sup>+</sup> exchanger. *Mol. Cell. Biochem.* 125: 137-143.
2. Biemesderfer, D., et al. 1993. NHE-3: a Na<sup>+</sup>/H<sup>+</sup> exchanger isoform of renal brush border. *Am. J. Physiol.* 265: F736-F742.
3. Noël, J. and Pouyssegur, J. 1995. Hormonal regulation, pharmacology, and membrane sorting of vertebrate Na<sup>+</sup>/H<sup>+</sup> exchanger isoforms. *Am. J. Physiol.* 268: C283-C296.
4. Klanke, C.A., et al. 1995. Molecular cloning and physical and genetic mapping of a novel human Na<sup>+</sup>/H<sup>+</sup> exchanger (NHE-5/SLC9A5) to chromosome 16q22.1. *Genomics* 25: 615-622.
5. Cox, G.A., et al. 1997. Sodium/hydrogen exchanger gene defect in slow-wave epilepsy mutant mice. *Cell* 91: 139-148.
6. Malakooti, J., et al. 1999. Molecular cloning, tissue distribution, and functional expression of the human Na<sup>+</sup>/H<sup>+</sup> exchanger NHE-2. *Am. J. Physiol.* 277: G383-G390.

## CHROMOSOMAL LOCATION

Genetic locus: Slc9a2 (mouse) mapping to 1 B.

## PRODUCT

NHE-2 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NHE-2 shRNA Plasmid (m): sc-42653-SH and NHE-2 shRNA (m) Lentiviral Particles: sc-42653-V as alternate gene silencing products.

For independent verification of NHE-2 (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-42653A, sc-42653B and sc-42653C.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

NHE-2 siRNA (m) is recommended for the inhibition of NHE-2 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  $\mu$ M in 66  $\mu$ 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-2 gene expression knockdown using RT-PCR Primer: NHE-2 (m)-PR: sc-42653-PR (20  $\mu$ l, 450 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.