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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

SANTA CRUZ BIOTECHNOLOGY, INC.

NHE-9 siRNA (m): sc-149958

BACKGROUND

NHE-9 (Na^+/H^+ exchanger 9), also known as SLC9A9 (solute carrier family 9 (sodium/hydrogen exchanger), member 9), is a 645 amino acid multi-pass membrane protein that localizes to late endosomes and belongs to the monovalent cation/proton antiporter family of ion transporters. Expressed ubiquitously with highest levels present in heart and skeletal muscle and lower levels present in liver, placenta and kidney, NHE-9 is thought to play a role in the electroneutral exchange of sodium ions for proteins across membrane and, via this activity, is involved in the maintenance of organelle ion homeostasis. Chromosomal aberrations in the NHE-9 gene are associated with the pathogenesis of early-onset behavioral/developmental disorder with features of attention deficit-hyperactivity disorder and intellectual disability (ADHD).

REFERENCES

1. de Silva, M.G., et al. 2003. Disruption of a novel member of a sodium/hydrogen exchanger family and DOCK3 is associated with an attention deficit hyperactivity disorder-like phenotype. J. Med. Genet. 40: 733-740.
2. Nakamura, N., et al. 2005. Four Na^+/H^+ exchanger isoforms are distributed to Golgi and post-Golgi compartments and are involved in organelle pH regulation. J. Biol. Chem. 280: 1561-1572.
3. Lasky-Su, J., et al. 2008. Genome-wide association scan of the time to onset of attention deficit hyperactivity disorder. Am. J. Med. Genet. B, Neuropsychiatr. Genet. 147B: 1355-1358.
4. Sutcliffe, J.S. 2008. Genetics. Insights into the pathogenesis of autism. Science 321: 208-209.
5. Morrow, E.M., et al. 2008. Identifying autism loci and genes by tracing recent shared ancestry. Science 321: 218-223.
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CHROMOSOMAL LOCATION

Genetic locus: Slc9a9 (mouse) mapping to 9 E3.3.

PRODUCT

NHE-9 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 NHE-9 shRNA Plasmid (m): sc-149958-SH and NHE-9 shRNA (m) Lentiviral Particles: sc-149958-V as alternate gene silencing products.

For independent verification of NHE-9 (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-149958A, sc-149958B and sc-149958C.

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

NHE-9 siRNA (m) is recommended for the inhibition of NHE-9 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.

GENE EXPRESSION MONITORING

NHE-9 (B-2): sc-515758 is recommended as a control antibody for monitoring of NHE-9 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NHE-9 gene expression knockdown using RT-PCR Primer: NHE-9 (m)-PR: sc-149958-PR (20 µl, 464 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.