

NaDC-3 siRNA (m): sc-149796

BACKGROUND

NaDC-3 (Na⁺/dicarboxylate cotransporter 3), also known as SLC13A3 (solute carrier family 13 (sodium-dependent dicarboxylate transporter), member 3) or SDCT2 (sodium-dependent high-affinity dicarboxylate transporter 2), is a 602 amino acid multi-pass membrane protein and high-affinity sodium-dicarboxylate cotransporter that exists as 4 alternatively spliced isoforms. As a member of the solute carrier family 13 (SLC13) gene family, NaDC-3 couples the transport of sodium and Krebs cycle intermediates, including succinate and citrate, across the plasma membrane. NaDC-3 binds three sodium ions followed by a divalent anion substrate, which results in one positive charge across the membrane. The gene encoding human NaDC-3 is localized to chromosome 20 and is expressed in kidney, liver, placenta, brain and pancreas.

REFERENCES

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2. Wang, H., et al. 2000. Structure, function, and genomic organization of human Na⁺-dependent high-affinity dicarboxylate transporter. *Am. J. Physiol., Cell Physiol.* 278: C1019-C1030.
3. Huang, W., et al. 2000. Transport of N-acetylaspartate by the Na⁺-dependent high-affinity dicarboxylate transporter NaDC3 and its relevance to the expression of the transporter in the brain. *J. Pharmacol. Exp. Ther.* 295: 392-403.
4. Markovich, D. and Murer, H. 2004. The SLC13 gene family of sodium sulphate/carboxylate cotransporters. *Pflugers Arch.* 447: 594-602.
5. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 606411. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Bai, X., et al. 2006. Identification of basolateral membrane targeting signal of human sodium-dependent dicarboxylate transporter 3. *J. Cell. Physiol.* 206: 821-830.
7. Pajor, A.M. 2006. Molecular properties of the SLC13 family of dicarboxylate and sulfate transporters. *Pflugers Arch.* 451: 597-605.

CHROMOSOMAL LOCATION

Genetic locus: Slc13a3 (mouse) mapping to 2 H3.

PRODUCT

NaDC-3 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 NaDC-3 shRNA Plasmid (m): sc-149796-SH and NaDC-3 shRNA (m) Lentiviral Particles: sc-149796-V as alternate gene silencing products.

For independent verification of NaDC-3 (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-149796A, sc-149796B and sc-149796C.

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

NaDC-3 siRNA (m) is recommended for the inhibition of NaDC-3 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

NaDC-3 (G-17): sc-85775 is recommended as a control antibody for monitoring of NaDC-3 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 (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NaDC-3 gene expression knockdown using RT-PCR Primer: NaDC-3 (m)-PR: sc-149796-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.