SANTA CRUZ BIOTECHNOLOGY, INC.

NaDC-1 siRNA (h): sc-106279

BACKGROUND

The sodium-dependent dicarboxylate transporter (NaDC-1), which belongs to the solute carrier family 13 (SLC13) gene family, couples the transport of sodium and Krebs cycle intermediates, including succinate and citrate, across the plasma membrane. NaDC-1 binds three sodium ions followed by a divalent anion substrate, which results in one positive charge across the membrane. NaDC-1 mediates the regulation of urinary citrate concentration, which if too low, has the potential to initiate the development of kidney stones. The gene encoding human NaDC-1 is localized to chromosome 17 and is expressed in kidney and small and large intestine. The NaDC-1 protein contains 11 transmembrane domains and 2 N-glycosylation sites and the carboxy-terminus of NaDC-1 contains the substrate recognition and cation affinity domain. Transmembrane domain (TMD) 9 is thought to form part of the translocation pathway through the transporter and mediate conformational changes between the cation and substrate binding sites, which may be facilitated by the presence of specific cysteine residues.

REFERENCES

1. Wright, S.H., et al. 1983. Kinetics of sodium succinate cotransport across renal brush-border membranes. J. Biol. Chem. 258: 5456-5462.
2. Yao, X. and Pajor, A.M. 2000. The transport properties of the human renal Na^+-dicarboxylate cotransporter under voltage-clamp conditions. Am. J. Physiol. Renal Physiol. 279: 54-64.
3. Pajor, A.M. and Sun, N.N. 2000. Molecular cloning, chromosomal organization, and functional characterization of a sodium-dicarboxylate cotransporter from mouse kidney. Am. J. Physiol. Renal Physiol. 279: 482-490.
4. Pajor, A.M. 2001. Conformationally-sensitive residues in transmembrane domain 9 of the Na^+/dicarboxylate cotransporter. J. Biol. Chem. 276: 29961-29968.

CHROMOSOMAL LOCATION

Genetic locus: SLC13A2 (human) mapping to 17q11.2.

PRODUCT

NaDC-1 siRNA (h) 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-1 shRNA Plasmid (h): sc-106279-SH and NaDC-1 shRNA (h) Lentiviral Particles: sc-106279-V as alternate gene silencing products.

For independent verification of NaDC-1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-106279A, sc-106279B and sc-106279C.

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

NaDC-1 siRNA (h) is recommended for the inhibition of NaDC-1 expression in human 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 NaDC-1 gene expression knockdown using RT-PCR Primer: NaDC-1 (h)-PR: sc-106279-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.