SANTA CRUZ BIOTECHNOLOGY, INC.

NCKX3 siRNA (m): sc-61161

BACKGROUND

Plasma membrane sodium/calcium exchangers are crucial for the maintenance of intracellular calcium homeostasis and the modulation of electrical conduction. Potassium-dependent sodium/calcium exchangers, such as NCKX3 (SLC24A3), presumably transport 1 intracellular calcium and one potassium ion in exchange for four extracellular sodium ions. NCKX3 is a deduced 644-amino acid protein which contains 11 transmembrane segments and 2 α-repeat regions, as well as 2 putative glycosylation sites at the N terminus and several putative phosphorylation sites in the central presumptive cytoplasmic loop. Human KCNX3 shares over 95% homology with mouse and rat NCKX3. Expression of NCKX3 is observed in almost all regions of the brain, with highest expression observed in the thalamus, hippocampus, amygdala and cerebellum. NCKX3 also demonstrates high expression in aorta, uterus and skeletal muscle tissues.

REFERENCES

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2. Aneiros, E., Philipp, S., Lis, A., Freichel, M. and Cavalié, A. 2004. Modulation of Ca^{2+} signaling by Na^{+}/Ca^{2+} exchangers in mast cells. J. Immunol. 174: 119-130.
3. Schnetkamp, P.P. 2004. The SLC24 Na^{+}/Ca^{2+}-K^{+} exchanger family: vision and beyond. Pflugers Arch. 447: 683-688.
4. Zhang, S., Yuan, J.X., Barrett, K.E. and Dong, H. 2005. Role of Na^{+}/Ca^{2+} exchange in regulating cytosolic Ca^{2+} in cultured human pulmonary artery smooth muscle cells. Am. J. Physiol., Cell Physiol. 288: C245-C252.
5. Dong, H., Jiang, Y., Triggle, C.R., Li, X. and Lytton, J. 2006. Novel role for K^{+}-dependent Na^{+}/Ca^{2+} exchangers in regulation of cytoplasmic free Ca^{2+} and contractility in arterial smooth muscle. Am. J. Physiol. Heart Circ. Physiol. 291: H1226-H1235.

CHROMOSOMAL LOCATION

Genetic locus: Slc24a3 (mouse) mapping to 2 G1.

PRODUCT

NCKX3 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 NCKX3 shRNA Plasmid (m): sc-61161-SH and NCKX3 shRNA (m) Lentiviral Particles: sc-61161-V as alternate gene silencing products.

For independent verification of NCKX3 (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-61161A, sc-61161B and sc-61161C.

RESEARCH USE

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

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

NCKX3 siRNA (m) is recommended for the inhibition of NCKX3 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NCKX3 gene expression knockdown using RT-PCR Primer: NCKX3 (m)-PR: sc-61161-PR (20 µl, 501 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.