SANTA CRUZ BIOTECHNOLOGY, INC.

neurocalcin δ siRNA (h): sc-77760

BACKGROUND

Neurocalcin δ (NCALD) is a 193 amino acid protein that belongs to the neuronal calcium sensor (NCS) family of calcium-binding proteins and is thought to play a role in the calcium-dependent regulation of rhodopsin phosphorylation. Expressed in cerebellum, cerebrum, brain stem, spinal cord, small intestine, retina, testis and ovary, neurocalcin δ localizes to the cytosol at resting calcium levels but moves to the membrane or perinuclear *trans*-Golgi network when intracellular calcium levels are elevated. The gene encoding neurocalcin δ maps to human chromosome 8, which consists of nearly 146 million base pairs, encodes over 800 genes and is associated with a variety of diseases and malignancies. Schizophrenia, bipolar disorder, trisomy 8, Pfeiffer syndrome, congenital hypothyroidism, Waardenburg syndrome and some leukemias and lymphomas are thought to occur as a result of defects in specific genes that map to chromosome 8.

REFERENCES

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2. Wang, W., et al. 2001. Molecular cloning, mapping and characterization of the human neurocalcin δ gene (NCALD). Biochim. Biophys. Acta 1518: 162-167.
3. Ivings, L., et al. 2002. Identification of Ca^{2+}-dependent binding partners for the neuronal calcium sensor protein neurocalcin δ: interaction with Actin, clathrin and tubulin. Biochem. J. 363: 599-608.
4. Selicorni, A., et al. 2002. Cytogenetic mapping of a novel locus for type II Waardenburg syndrome. Hum. Genet. 110: 64-67.
5. O'Callaghan, D.W., et al. 2002. Differential use of myristoyl groups on neuronal calcium sensor proteins as a determinant of spatio-temporal aspects of Ca^{2+} signal transduction. J. Biol. Chem. 277: 14227-14237.
6. McQueen, M.B., et al. 2005. Combined analysis from eleven linkage studies of bipolar disorder provides strong evidence of susceptibility loci on chromosomes 6q and 8q. Am. J. Hum. Genet. 77: 582-595.

CHROMOSOMAL LOCATION

Genetic locus: NCALD (human) mapping to 8q22.3.

PRODUCT

neurocalcin δ 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 neurocalcin δ shRNA Plasmid (h): sc-77760-SH and neurocalcin δ shRNA (h) Lentiviral Particles: sc-77760-V as alternate gene silencing products.

For independent verification of neurocalcin δ (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-77760A, sc-77760B and sc-77760C.

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

neurocalcin δ siRNA (h) is recommended for the inhibition of neurocalcin δ 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 neurocalcin δ gene expression knockdown using RT-PCR Primer: neurocalcin δ (h)-PR: sc-77760-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.

PROTOCOLS

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