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NrCAM siRNA (m): sc-43175

BACKGROUND

Neuronal cell adhesion molecule (NrCAM) is a cell surface protein of the immunoglobulin (Ig) superfamily. NrCAM (also known as Bravo) contains six Ig domains, five Fibronectin repeats, a transmembrane region and an intracellular domain. NrCAM is expressed in brain, spinal cord, peripheral nervous system and pancreas. In the spinal cord, NrCAM acts as a ligand for axonin-1 to guide commissural axons across the floor plate. NrCAM also acts as a ligand for F3 to control Actin-dependent growth cone motility. NrCAM interacts with Neurofascin and may facilitate the clustering of the cytoskeletal protein Ankyrin G and the voltage-dependent sodium channel proteins at the node of Ranvier. NrCAM expression may play a role in the severity of certain types of tumors. NrCAM is overexpressed in high-grade astrocytomas, gliomas and glioblastoma tumor tissues. In the pancreas, NrCAM expression is upregulated in intraductal hyperplasia. Antisense NrCAM reduces the tumorigenic properties of human glioblastoma cells *in vitro* and slowed tumor growth *in vivo*. The gene encoding human NrCAM maps to chromosome 7q31.1.

REFERENCES

1. Lane, R.P., et al. 1996. Characterization of a highly conserved human homolog to the chicken neural cell surface protein Bravo/NrCAM that maps to chromosome band 7q31. *Genomics* 35: 456-465.
2. Stoeckli, E.T., et al. 1997. Interference with axonin-1 and NrCAM interactions unmasks a floor-plate activity inhibitory for commissural axons. *Neuron* 18: 209-221.
3. Sehgal, A., et al. 1998. Cell adhesion molecule NrCAM is over-expressed in human brain tumors. *Int. J. Cancer* 76: 451-458.
4. Sehgal, A., et al. 1999. Antisense human neuroglia related cell adhesion molecule hNrCAM, reduces the tumorigenic properties of human glioblastoma cells. *Anticancer Res.* 19: 4947-4953.
5. Faivre-Sarrailh, C., et al. 1999. NrCAM, cerebellar granule cell receptor for the neuronal adhesion molecule F3, displays an Actin-dependent mobility in growth cones. *J. Cell Sci.* 112: 3015-3027.
6. Dhodapkar, K.M., et al. 2001. Differential expression of the cell-adhesion molecule NrCAM in hyperplastic and neoplastic human pancreatic tissue. *Hum. Pathol.* 32: 396-400.

CHROMOSOMAL LOCATION

Genetic locus: *Nrcam* (mouse) mapping to 12 B3.

PRODUCT

NrCAM 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NrCAM shRNA Plasmid (m): sc-43175-SH and NrCAM shRNA (m) Lentiviral Particles: sc-43175-V as alternate gene silencing products.

For independent verification of NrCAM (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-43175A, sc-43175B and sc-43175C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

NrCAM siRNA (m) is recommended for the inhibition of NrCAM 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 μ M in 66 μ l. 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 NrCAM gene expression knockdown using RT-PCR Primer: NrCAM (m)-PR: sc-43175-PR (20 μ l). 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.