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SANTA CRUZ BIOTECHNOLOGY, INC.

NgBR siRNA (m): sc-149951

BACKGROUND

Nogo is an oligodendrocyte-specific member of the reticulon family and is a component of CNS white matter that inhibits axon outgrowth, induces collapse of growth cones of chick dorsal root ganglion cells, and inhibits the spreading of 3T3 fibroblasts. Nogo is expressed by oligodendrocytes but not by Schwann cells and associates primarily with the endoplasmic reticulum. Nogo exists in three different splice forms, Nogo-A, -B and -C. NgBR (Nogo-B receptor), also known as nuclear undecaprenyl pyrophosphate synthase 1 homolog, is a 293 amino acid single-pass type I membrane protein that acts as a specific receptor for the amino-terminus of Nogo-B. Through this interaction, NgBR is in-volved in the regulation of vascular remodeling and angiogenesis. NgBR also enhances Niemann-Pick type C2 protein (NPC2) stabilization. Knockdown of NgBR mRNA leads to decreased NPC2 levels, which results in the hall-marks of NPC2 mutation: increased intracellular cholesterol accumulation and a loss of sterol sensing.

REFERENCES

1. Josephson, A., et al. 2002. Nogo-receptor gene activity: cellular localization and developmental regulation of mRNA in mice and humans. J. Comp. Neurol. 453: 292-304.
2. Meier, S., et al. 2003. Molecular analysis of Nogo expression in the hip-pocampus during development and following lesion and seizure. FASEB J. 17: 1153-1155.
3. D'Agostino, S., et al. 2006. Membrane vesicles shed by oligodendroglioma cells induce neuronal apoptosis. Int. J. Oncol. 29: 1075-1085.
4. Miao, R.Q., et al. 2006. Identification of a receptor necessary for Nogo-B stimulated chemotaxis and morphogenesis of endothelial cells. Proc. Natl. Acad. Sci. USA 103: 10997-11002.
5. Li, M., et al. 2007. Nogo-B receptor possesses an intrinsically unstruc-tured ectodomain and a partially folded cytoplasmic domain. Biochem. Biophys. Res. Commun. 360: 128-134.
6. Storch, J., et al. 2009. Niemann-Pick C2 (NPC2) and intracellular choles-terol trafficking. Biochim. Biophys. Acta 1791: 671-678.
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CHROMOSOMAL LOCATION

Genetic locus: Nus1 (mouse) mapping to 10 B3.

PRODUCT

NgBR 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 NgBR shRNA Plasmid (m): sc-149951-SH and NgBR shRNA (m) Lentiviral Particles: sc-149951-V as alter-nate gene silencing products.

For independent verification of NgBR (m) gene silencing results, we also pro-vide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-149951A, sc-149951B and sc-149951C.

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

NgBR siRNA (m) is recommended for the inhibition of NgBR 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 recom-mended. 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 NgBR gene expres-sion knockdown using RT-PCR Primer: NgBR (m)-PR: sc-149951-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.