

NgR3 siRNA (h): sc-94025

BACKGROUND

NgR3 (Nogo-66 receptor-related protein 3), also known as RTN4RL1 (reticulon 4 receptor-like 1), NGRH2 or NGRL2 (Nogo receptor-like 2), is a 441 amino acid protein that belongs to the Nogo receptor family. Localized to the cell membrane, NgR3 contains eight LRR (leucine-rich) repeats. NgR3 is predominantly expressed in brain, where it localizes to the surface of neurons, but is also found at lower levels in lung, placenta, kidney, mammary gland, skeletal muscle, spleen and salivary gland. NgR3 is thought to play a role in the regulation of axonal regeneration and plasticity in the adult central nervous system. The gene that encodes NgR3 maps to human chromosome 17, which makes up over 2.5% of the human genome with about 81 million bases encoding over 1,200 genes.

REFERENCES

1. GrandPré, T., et al. 2000. Identification of the Nogo inhibitor of axon regeneration as a Reticulon protein. *Nature* 403: 439-444.
2. Wang, K.C., et al. 2002. Oligodendrocyte-myelin glycoprotein is a Nogo receptor ligand that inhibits neurite outgrowth. *Nature* 417: 941-944.
3. Barton, W.A., et al. 2003. Structure and axon outgrowth inhibitor binding of the Nogo-66 receptor and related proteins. *EMBO J.* 22: 3291-3302.
4. Pignot, V., et al. 2003. Characterization of two novel proteins, NgRH1 and NgRH2, structurally and biochemically homologous to the Nogo-66 receptor. *J. Neurochem.* 85: 717-728.
5. Laurén, J., et al. 2003. Two novel mammalian Nogo receptor homologs differentially expressed in the central and peripheral nervous systems. *Mol. Cell. Neurosci.* 24: 581-594.

CHROMOSOMAL LOCATION

Genetic locus: RTN4RL1 (human) mapping to 17p13.3.

PRODUCT

NgR3 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NgR3 shRNA Plasmid (h): sc-94025-SH and NgR3 shRNA (h) Lentiviral Particles: sc-94025-V as alternate gene silencing products.

For independent verification of NgR3 (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-94025A, sc-94025B and sc-94025C.

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

NgR3 siRNA (h) is recommended for the inhibition of NgR3 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 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.

GENE EXPRESSION MONITORING

NgR3 (H-11): sc-515400 is recommended as a control antibody for monitoring of NgR3 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NgR3 gene expression knockdown using RT-PCR Primer: NgR3 (h)-PR: sc-94025-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.