SANTA CRUZ BIOTECHNOLOGY, INC.

Neuritin siRNA (h): sc-42064

BACKGROUND

Neurotrophins function to regulate naturally occurring cell death of neurons during development. The prototype neurotrophin is nerve growth factor (NGF). NGF is a soluble peptide that promotes the survival of, and neurite outgrowth from, sympathetic ganglia. Three additional structurally homologous neurotrophic factors have been identified. These include brain-derived neurotrophic factor (BDNF), neurotrophin-3 (NT-3), and neurotrophin-4 (NT-4, also designated NT-5). Neuritin is a glycosylphosphatidylinositol-anchored protein that is induced by neural activity as well as by BDNF and NT-3. Neuritin modulates neurite growth extracellularly and is present in development and in the adult nervous system, indicating its involvement in neuronal plasticity. In addition to BDNF induction of Neuritin, it has been shown that both Neuritin and BDNF are induced by light stimulation of the visual cortex. Neuritin appears to be located downstream of BDNF and may mediate some of the effects of BDNF.

REFERENCES

1. Oppenhem, R.W. 1991. Cell death during development of the nervous system. Annu. Rev. Neurosci. 14: 453-501.
2. Thoenen, H. 1991. The changing scene of neurotrophic factors. Trends Neurosci. 14: 165-170.
3. Klein, R. 1994. Role of neurotrophins in mouse neuronal development. FASEB J. 8: 738-744.
4. Gotz, R., et al. 1994. The conservation of neurotrophic factors during vertebrate evolution. Comp. Biochem. Physiol. Pharmacol. Toxicol. Endocrinol. 108: 1-10.
5. Naeve, G.S., et al. 1997. Neuritin: a gene induced by neural activity and neurotrophins that promotes neuritogenesis. Proc. Natl. Acad. Sci. USA 94: 2648-2653.
6. Di Giovanni, S., et al. 2005. Neuronal plasticity after spinal cord injury: identification of a gene cluster driving neurite outgrowth. FASEB J. 19: 153-154.
7. Marron, T.U., et al. 2005. Androgen-induced neurite outgrowth is mediated by Neuritin in motor neurones. J. Neurochem. 92: 10-20.

CHROMOSOMAL LOCATION

Genetic locus: NRN1 (human) mapping to 6p25.1.

PRODUCT

Neuritin 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. Suit-able for 50-100 transfections. Also see Neuritin shRNA Plasmid (h): sc-42064-SH and Neuritin shRNA (h) Lentiviral Particles: sc-42064-V as alternate gene silencing products.

For independent verification of Neuritin (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-42064A, sc-42064B and sc-42064C.

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

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

GENE EXPRESSION MONITORING

Neuritin (B-9): sc-365538 is recommended as a control antibody for monitoring of Neuritin 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Neuritin gene expression knockdown using RT-PCR Primer: Neuritin (h)-PR: sc-42064-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.