

NT-3 siRNA (m): sc-42126

BACKGROUND

Neurotrophins function to regulate naturally occurring cell death of neurons during development. The prototype neurotrophin is nerve growth factor (NGF), originally discovered in the 1950s as a soluble peptide promoting 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). These various neurotrophins stimulate the *in vitro* survival of distinct, but partially overlapping, populations of neurons. The cell surface receptors through which neurotrophins mediate their activity have been identified. For instance, the Trk A receptor is the preferential receptor for NGF, but also binds NT-3 and NT-4. The Trk B receptor binds both BDNF and NT-4 equally well, and binds NT-3 to a lesser extent, while the Trk C receptor only binds NT-3.

REFERENCES

1. Oppenheim, 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. Chao, K.K., Cheung, E., Armstrong, W.B. and Wong, B.J. 1992. Neurotrophin receptors: a window into neuronal differentiation. *Neuron* 9: 583-593.
4. Korsching, S. 1993. The neurotrophic factor concept: a reexamination. *J. Neurosci.* 13: 2739-2748.
5. Ip, N.Y., Stitt, T.N., Tapley, P., Klein, R., Glass, D.J., Fandl, J., Greene, L.A., Barbacid, M. and Yancopoulos, G.D. 1993. Similarities and differences in the way neurotrophins interact with the Trk receptors in neuronal and non-neuronal cells. *Neuron* 10: 137-149.
6. Klein, R. 1994. Role of neurotrophins in mouse neuronal development. *FASEB J.* 8: 738-744.
7. Gotz, R. and Scharf, M. 1994. The conservation of neurotrophic factors during vertebrate evolution. *Comp. Biochem. Physiol.* 108: 1-10.

CHROMOSOMAL LOCATION

Genetic locus: Ntf3 (mouse) mapping to 6 F3.

PRODUCT

NT-3 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 NT-3 shRNA Plasmid (m): sc-42126-SH and NT-3 shRNA (m) Lentiviral Particles: sc-42126-V as alternate gene silencing products.

For independent verification of NT-3 (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-42126A, sc-42126B and sc-42126C.

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

NT-3 siRNA (m) is recommended for the inhibition of NT-3 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 NT-3 gene expression knockdown using RT-PCR Primer: NT-3 (m)-PR: sc-42126-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.