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NTE siRNA (m): sc-44514

BACKGROUND

Neuropathy target esterase (NTE) is a member of a newly discovered protein family, with a domain conserved through evolution. It is an integral membrane protein present in all neurons and in some non-neural cell types of vertebrates. NTE is important in neural development and has the capacity to hydrolyse esters. It is important in the cell-signalling pathway controlling interactions between neurons and accessory glial cells in nervous system development. NTE can be modified by organophosphates, which can cause neuropathy (characterized by axonal degeneration) in humans. NTE loss can lead to prominent neuronal pathology in the thalamus and hippocampus and can also lead to defects in the cerebellum.

REFERENCES

1. Tormo, N., et al. 1993. Soluble and particulate organophosphorus neuropathy target esterase in brain and sciatic nerve of the hen, cat, rat, and chick. *J. Neurochem.* 61: 2164-2168.
2. Glynn, P. 1999. Neuropathy target esterase. *Biochem. J.* 3: 625-631.
3. Quistad, G.B., et al. 2003. Evidence that mouse brain neuropathy target esterase is a lysophospholipase. *Proc. Natl. Acad. Sci. USA* 100: 7983-7987.
4. Li, Y., et al. 2003. Protein domains, catalytic activity, and subcellular distribution of neuropathy target esterase in Mammalian cells. *J. Biol. Chem.* 278: 8820-8825.
5. Akassoglou, K., et al. 2004. Brain-specific deletion of neuropathy target esterase/swisscheese results in neurodegeneration. *Proc. Natl. Acad. Sci. USA* 101: 5075-5080.
6. Zaccheo, O., et al. 2004. Neuropathy target esterase and its yeast homologue degrade phosphatidylcholine to glycerophosphocholine in living cells. *J. Biol. Chem.* 279: 24024-24033.
7. Moser, M., et al. 2004. Placental failure and impaired vasculogenesis result in embryonic lethality for neuropathy target esterase-deficient mice. *Mol. Cell. Biol.* 24: 1667-1679.

CHROMOSOMAL LOCATION

Genetic locus: Pnpla6 (mouse) mapping to 8 A1.1.

PRODUCT

NTE 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 NTE shRNA Plasmid (m): sc-44514-SH and NTE shRNA (m) Lentiviral Particles: sc-44514-V as alternate gene silencing products.

For independent verification of NTE (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-44514A, sc-44514B and sc-44514C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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

NTE siRNA (m) is recommended for the inhibition of NTE 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.

GENE EXPRESSION MONITORING

NTE (G-4): sc-271049 is recommended as a control antibody for monitoring of NTE 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 NTE gene expression knockdown using RT-PCR Primer: NTE (m)-PR: sc-44514-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.