

NP1 siRNA (h): sc-42093

BACKGROUND

Long pentraxins are a family of highly conserved proteins that are expressed in the brain and central nervous system, and form multimeric complexes. Neuronal pentraxin 1 (NP1), NP2 and neuronal pentraxin receptor (NPR) are members of the long pentraxins that represent a neuronal uptake pathway that may function during synapse formation and remodeling. The NP1 gene is located on chromosome 17q25.3 and the protein product mediates the uptake of synaptic material, including the presynaptic snake venom toxin, taipoxin. NP2, whose function is unknown, is located on chromosome 7q22.1 and like NP1 contains several potential N-linked glycosylation sites. NPR is expressed on the cell membrane and can form heteropentamers with NP1 and NP2 that can be released from the cell membrane by proteolysis.

REFERENCES

1. Hsu, Y.C. and Perin, M.S. 1995. Human neuronal pentraxin II (NPTX2): conservation, genomic structure, and chromosomal localization. *Genomics* 28: 220-227.
2. Goodman, A.R., et al. 1996. Long pentraxins: an emerging group of proteins with diverse functions. *Cytokine Growth Factor Rev.* 7: 191-202.
3. Omeis, I.A., et al. 1996. Mouse and human neuronal pentraxin I (NPTX1): conservation, genomic structure, and chromosomal localization. *Genomics* 36: 543-545.
4. Kirkpatrick, L.L., et al. 2000. Biochemical interactions of the neuronal pentraxins. Neuronal pentraxin (NP) receptor binds to taipoxin and taipoxin-associated calcium-binding protein 49 via NP1 and NP2. *J. Biol. Chem.* 275: 17786-17792.

CHROMOSOMAL LOCATION

Genetic locus: NPTX1 (human) mapping to 17q25.3.

PRODUCT

NP1 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 NP1 shRNA Plasmid (h): sc-42093-SH and NP1 shRNA (h) Lentiviral Particles: sc-42093-V as alternate gene silencing products.

For independent verification of NP1 (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-42093A, sc-42093B and sc-42093C.

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

NP1 siRNA (h) is recommended for the inhibition of NP1 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

NP1 (B-8): sc-374199 is recommended as a control antibody for monitoring of NP1 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 NP1 gene expression knockdown using RT-PCR Primer: NP1 (h)-PR: sc-42093-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Castro-Rivera, E., et al. 2008. Semaphorin 3B inhibits the phosphatidylinositol 3-kinase/Akt pathway through neuropilin-1 in lung and breast cancer cells. *Cancer Res.* 68: 8295-8303.
2. Yoo, S.A., et al. 2015. Placental growth factor-1 and -2 induce hyperplasia and invasiveness of primary rheumatoid synoviocytes. *J. Immunol.* 194: 2513-2521.

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.