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SANTA CRUZ BIOTECHNOLOGY, INC.

Neurabin-II siRNA (h): sc-43962

BACKGROUND

Neurabin-II, also called spinophilin, interacts with actin and PP-1 in dendritic spines of the central nervous system. The gene encoding human neurabin-II maps to chromosome 17q21.33. The structural characteristics of neurabin-II include one F-actin binding domain at the N-terminal region, a predicted coiled-coil struture at the C-terminal, one PDZ domain at the middle region, and a domain known to interact with transmembrane proteins. Neurabin-II bundles Actin fliaments *in vitro. In vivo,* spinophilin localizes to the cortical sites of Actin filaments and to the sites of active membrane remodelling. Neurabin-II also forms a complex with the catalytic subunit of PP1 and modulates PP1 enzymatic activity *in vitro.* Neurabin-II localizes to the head of dendritic spines and aids in the ability of PP-1 to regulate the activity of a-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA) and N-methyl-D-asparate (NMDA) receptors. In this manner, neurabin-II modulates both glutamatergic synaptic transmission and dendritic morphology. Synergistic interactions between spinophilin and human tumor supressor ARF suggest a role for neurabin-II in cell growth.

REFERENCES

1. Allen, P.B., et al. 1997. Spinophilin, a novel protein phosphatase 1 binding protein localized to dendritic spines. Proc. Natl. Acad. Sci. USA 94: 9956-9961.
2. Satoh, A., et al. 1998. Neurabin-II/spinophilin. An Actin filament-binding protein with one PDZ domain localized at cadherin-based cell-cell adhesion sites. J. Biol. Chem. 273: 3470-3475.
3. Feng, J., et al. 2000. Spinophilin regulates the formation and function of dendritic spines. Proc. Natl. Acad. Sci. USA 97: 9287-9292.
4. Stephens, D.J., et al. 2000. *In vivo* dynamics of the F-Actin-binding protein neurabin-II. Biochem. J. 345: 185-194.

CHROMOSOMAL LOCATION

Genetic locus: PPP1R9B (human) mapping to 17q21.33.

PRODUCT

Neurabin-II 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. Suitable for 50-100 transfections. Also see Neurabin-II shRNA Plasmid (h): sc-43962-SH and Neurabin-II shRNA (h) Lentiviral Particles: sc-43962-V as alternate gene silencing products.

For independent verification of Neurabin-II (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-43962A, sc-43962B and sc-43962C.

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.

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

Neurabin-II siRNA (h) is recommended for the inhibition of Neurabin-II 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

Neurabin-II (D-7): sc-373974 is recommended as a control antibody for monitoring of Neurabin-II 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 Neurabin-II gene expression knockdown using RT-PCR Primer: Neurabin-II (h)-PR: sc-43962-PR (20 µl, 479 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.