

# Neurabin-II (H-170): sc-32933

## 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 structure at the C-terminal, one PDZ domain at the middle region, and a domain known to interact with transmembrane proteins. Neurabin-II bundles actin filaments *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  $\alpha$ -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA) and N-methyl-D-aspartate (NMDA) receptors. In this manner, neurabin-II modulates both glutamatergic synaptic transmission and dendritic morphology. Synergistic interactions between spinophilin and human tumor suppressor ARF suggest a role for neurabin-II in cell growth.

## REFERENCES

- 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.
- 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.
- Feng, J., et al. 2000. Spinophilin regulates the formation and function of dendritic spines. *Proc. Natl. Acad. Sci. USA* 97: 9287-9292.
- Stephens, 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; Ppp1r9b (mouse) mapping to 11 D.

## SOURCE

Neurabin-II (H-170) is a rabbit polyclonal antibody raised against amino acids 261-430 mapping within an internal region of Neurabin-II of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4°C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

Neurabin-II (H-170) is recommended for detection of Neurabin-II of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

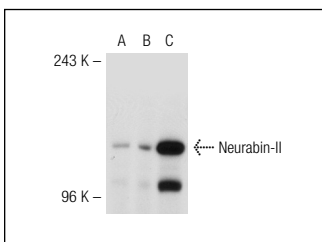
Suitable for use as control antibody for Neurabin-II siRNA (h): sc-43962, Neurabin-II siRNA (m): sc-149924, Neurabin-II shRNA Plasmid (h): sc-43962-SH, Neurabin-II shRNA Plasmid (m): sc-149924-SH, Neurabin-II shRNA (h) Lentiviral Particles: sc-43962-V and Neurabin-II shRNA (m) Lentiviral Particles: sc-149924-V.

Positive Controls: Neurabin-II (m): 293T Lysate: sc-125695, IMR-32 cell lysate: sc-2409 or mouse cerebellum extract: sc-2403.

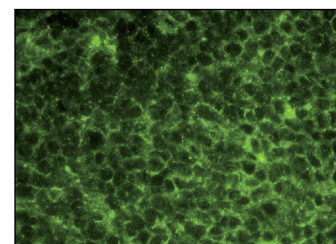
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



Neurabin-II (H-170): sc-32933. Western blot analysis of Neurabin-II expression in non-transfected 293T: sc-117752 (A), mouse Neurabin-II transfected 293T: sc-125695 (B) and IMR-32 (C) whole cell lysates.



Neurabin-II (H-170): sc-32933. Immunofluorescence staining of normal mouse intestine frozen section showing cytoplasmic staining.

## SELECT PRODUCT CITATIONS

- Meng, X., et al. 2009. PPP1R9B (Neurabin 2): involvement and dynamics in the NK immunological synapse. *Eur. J. Immunol.* 39: 552-560.

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Try **Neurabin-II (D-7): sc-373974** or **Neurabin-II (17): sc-136407**, our highly recommended monoclonal alternatives to Neurabin-II (H-170).