SANTA CRUZ BIOTECHNOLOGY, INC.

Neurabin-I (52): sc-136327

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

Brain-specific Neurabin-I (neural tissue-specific F-actin binding protein I) is highly concentrated in the synapse of developed neurons; it localizes in the growth cone lamellipodia during neuronal development. Suppression of endogenous Neurabin in rat hippocampal neurons inhibits neurite formation. Neurabin-I recruits active PP1 via a PP1-docking sequence; mutation of the PP1-binding motif halts filopodia and restores stress fibers in Neurabin-I expressing cells. Neurabin-II (Spinophilin) is ubiquitously expressed but is abundantly expressed in brain. Neurabin-II localizes to neuronal dentritic spines, which are the specialized protrusions from dendritic shafts that receive most of the excitatory input in the CNS. Neurabin-II may regulate dendritic spine properties as Neurabin-II(-) mice have increased spine density during development *in vitro* and exhibit altered filopodial formation in cultured cells. Neurabin may also play a role in glutamatergic transmission as Neurabin-II(-) mice exhibit reduced long-term depression and resistance to kainate-induced seizures and neronal apoptosis. Neurabin-II complexes with the catalytic subunit of protein phosphatase 1 (PP1) *in vitro,* thus modulating the activity of PP1.

REFERENCES

1. Nakanishi, H., et al. 1997. Neurabin: a novel neural tissue-specific actin filament-binding protein involved in neurite formation. J. Cell Biol. 139: 951-961.
2. 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.
3. McAvoy, T., et al. 1999. Regulation of Neurabin I interaction with protein phosphatase 1 by phosphorylation. Biochemistry 38: 12943-12949.
4. Feng, J., et al. 2000. Spinophilin regulates the formation and function of dendritic spines. Proc. Natl. Acad. Sci. USA 97: 9287-9292.
5. Oliver, C.J., et al. 2002. Targeting protein phosphatase 1 (PP1) to the actin cytoskeleton: the Neurabin I/PP1 complex regulates cell morphology. Mol. Cell. Biol. 22: 4690-4701.

CHROMOSOMAL LOCATION

Genetic locus: PPP1R9A (human) mapping to 7q21.3; Ppp1r9a (mouse) mapping to 6 A1.

SOURCE

Neurabin-I (52) is a mouse monoclonal antibody raised against amino acids 5-115 of Neurabin-I of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml 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.

APPLICATIONS

Neurabin-I (52) is recommended for detection of Neurabin-I of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Neurabin-I siRNA (h): sc-45982, Neurabin-I siRNA (m): sc-45983, Neurabin-I shRNA Plasmid (h): sc-45982-SH, Neurabin-I shRNA Plasmid (m): sc-45983-SH, Neurabin-I shRNA (h) Lentiviral Particles: sc-45982-V and Neurabin-I shRNA (m) Lentiviral Particles: sc-45983-V.

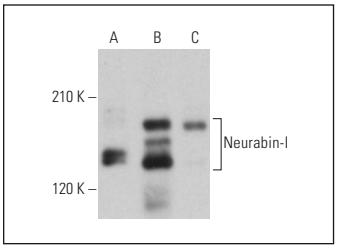
Molecular Weight of Neurabin-I: 180 kDa.

Positive Controls: mouse brain extract: sc-2253, rat brain extract: sc-2392 or Neuro-2A whole cell lysate: sc-364185.

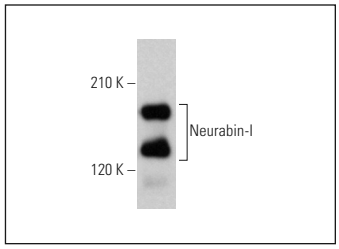
RECOMMENDED SUPPORT REAGENTS

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, 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 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.

DATA



Neurabin-I (52): sc-136327. Western blot analysis of Neurabin-I expression in Neuro-2A whole cell lysate (**A**) and mouse brain (**B**) and human brain (**C**) tissue extracts.



Neurabin-I (52): sc-136327. Western blot analysis of Neurabin-I expression in rat brain tissue extract.

RESEARCH USE

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

PROTOCOLS

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