

# Neurabin-I (D-4): sc-377407

## 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 dendritic 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 III(-) 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 neuronal 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Neurabin-I (D-4) is a mouse monoclonal antibody raised against amino acids 799-1098 mapping at the C-terminus of Neurabin-I of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Neurabin-I (D-4) is available conjugated to agarose (sc-377407 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377407 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377407 PE), fluorescein (sc-377407 FITC), Alexa Fluor® 488 (sc-377407 AF488), Alexa Fluor® 546 (sc-377407 AF546), Alexa Fluor® 594 (sc-377407 AF594) or Alexa Fluor® 647 (sc-377407 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377407 AF680) or Alexa Fluor® 790 (sc-377407 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## RESEARCH USE

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

## APPLICATIONS

Neurabin-I (D-4) is recommended for detection of Neurabin-I of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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-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.

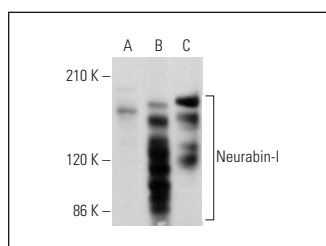
Molecular Weight of Neurabin-I: 180 kDa.

Positive Controls: rat brain extract: sc-2392, A549 cell lysate: sc-2413 or mouse brain extract: sc-2253.

## 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, UltraCruz® Blocking Reagent: sc-516214 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 (D-4): sc-377407. Western blot analysis of Neurabin-I expression in A549 whole cell lysate (A) and mouse brain (B) and rat brain (C) tissue extracts.

## SELECT PRODUCT CITATIONS

1. Kumar, S.P. and Babu, P.P. 2020. Aberrant dopamine receptor signaling plays critical role in the impairment of striatal neurons in experimental cerebral malaria. *Mol. Neurobiol.* 57: 5069-5083.

## STORAGE

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