SANTA CRUZ BIOTECHNOLOGY, INC.

Neurabin-II (D-7): sc-373974

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.

SOURCE

Neurabin-II (D-7) is a mouse monoclonal antibody raised against amino acids 261-430 mapping within an internal region of Neurabin-II of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Neurabin-II (D-7) is available conjugated to agarose (sc-373974 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-373974 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373974 PE), fluorescein (sc-373974 FITC), Alexa Fluor® 488 (sc-373974 AF488), Alexa Fluor® 546 (sc-373974 AF546), Alexa Fluor® 594 (sc-373974 AF594) or Alexa Fluor® 647 (sc-373974 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373974 AF680) or Alexa Fluor® 790 (sc-373974 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

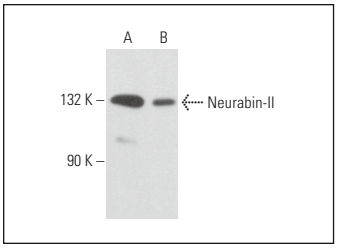
Neurabin-II (D-7) is recommended for detection of Neurabin-II of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (start-ing 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 shRNA Plasmid (h): sc-43962-SH and Neurabin-II shRNA (h) Lentiviral Particles: sc-43962-V.

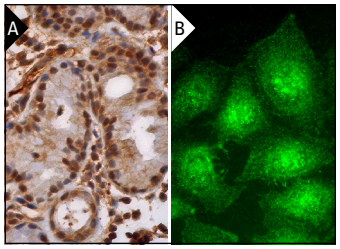
Molecular Weight of Neurabin-II: 140 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409 or human brain extract: sc-364375.

DATA



Neurabin-II (D-7): sc-373974. Western blot analysis of Neurabin-II expression in IMR-32 whole cell lysate (**A**) and human brain tissue extract (**B**).



Neurabin-II (D-7): sc-373974. Immunoperoxidase staining of formalin fixed, paraffin-embedded human salivary gland tissue showing cytoplasmic and nuclear staining of glandular cells (**A**). Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (**B**).

SELECT PRODUCT CITATIONS

1. Brocos-Mosquera, I., et al. 2018. Characterisation of spinophilin immunoreactivity in postmortem human brain homogenates. Prog. Neuropsychopharmacol. Biol. Psychiatry 81: 236-242.
2. Bott, C.J., et al. 2020. Nestin selectively facilitates the phosphorylation of the lissencephaly-linked protein Doublecortin (DCX) by Cdk5/p35 to regulate growth cone morphology and SEMA3A sensitivity in developing neurons. J. Neurosci. 40: 3720-3740.

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.

PROTOCOLS

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