

# neuroigin 1 (A-4): sc-365110

## BACKGROUND

Neuroigins are a family of plasma membrane proteins that possess an N-terminal hydrophobic domain, a large esterase homology domain, a single transmembrane region, a short cytoplasmic domain, and an EF-hand binding domain. Members of the neuroigin family include neuroigin 1, neuroigin 2 and neuroigin 3. Neuroigins are expressed in excitatory neuronal synaptic clefts. Neuroigins play a role in the formation and remodeling of CNS synapses by binding to  $\beta$ -neurexins, a family of neuronal cell surface proteins. Neurexin 1 $\beta$  binds to the EF-hand domain of neuroigin 1 and requires calcium ion. Neuroigins also bind to PSD-95, which may recruit ion channels and neurotransmitter receptors to the synapses.

## REFERENCES

1. Ichtchenko, K., et al. 1996. Structures, alternative splicing, and neurexin binding of multiple neuroigins. *J. Biol. Chem.* 271: 2676-2682.
2. Nguyen, T. and Sudhof, T.C. 1997. Binding properties of neuroigin 1 and neurexin 1 $\beta$  reveal fuction as heterophilic cell adhesion molecules. *J. Biol. Chem.* 272: 26032-26039.
3. Irie, M., et al. 1997. Binding of neuroigin to PSD-95. *Science* 277: 1511-1515.

## CHROMOSOMAL LOCATION

Genetic locus: NLGN1 (human) mapping to 3q26.31; Nlgn1 (mouse) mapping to 3 A3.

## SOURCE

neuroigin 1 (A-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 33-61 near the N-terminus of neuroigin 1 of rat origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

neuroigin 1 (A-4) is available conjugated to agarose (sc-365110 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365110 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365110 PE), fluorescein (sc-365110 FITC), Alexa Fluor<sup>®</sup> 488 (sc-365110 AF488), Alexa Fluor<sup>®</sup> 546 (sc-365110 AF546), Alexa Fluor<sup>®</sup> 594 (sc-365110 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-365110 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-365110 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-365110 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365110 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

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

## APPLICATIONS

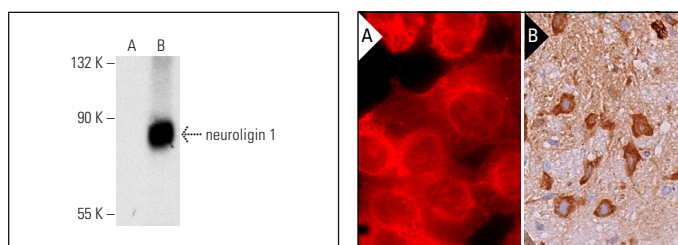
neuroigin 1 (A-4) is recommended for detection of neuroigin 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 neuroigin 1 siRNA (h): sc-42083, neuroigin 1 siRNA (m): sc-42084, neuroigin 1 siRNA (r): sc-156002, neuroigin 1 shRNA Plasmid (h): sc-42083-SH, neuroigin 1 shRNA Plasmid (m): sc-42084-SH, neuroigin 1 shRNA Plasmid (r): sc-156002-SH, neuroigin 1 shRNA (h) Lentiviral Particles: sc-42083-V, neuroigin 1 shRNA (m) Lentiviral Particles: sc-42084-V and neuroigin 1 shRNA (r) Lentiviral Particles: sc-156002-V.

Molecular Weight of neuroigin 1: 101 kDa.

Positive Controls: neuroigin 1 (h): 293T Lysate: sc-115314, rat cerebellum extract: sc-2398 or HeLa whole cell lysate: sc-2200.

## DATA



neuroigin 1 (A-4): sc-365110. Western blot analysis of neuroigin 1 expression in non-transfected: sc-117752 (A) and human neuroigin 1 transfected: sc-115314 (B) 293T whole cell lysates.

neuroigin 1 (A-4): sc-365110. Immunofluorescence staining of formalin-fixed HeLa cells showing membrane and cytoplasmic localization. Detected with m-IgG $\kappa$  BP-CFL 555: sc-516177 (A). Immunoperoxidase stain-ing of formalin fixed, paraffin-embedded mouse brain tissue showing cytoplasmic staining of neuronal cells and glial cells (B).

## SELECT PRODUCT CITATIONS

1. Bernard, P.B., et al. 2014. Necessary, but not sufficient: insights into the mechanisms of mGluR mediated long-term depression from a rat model of early life seizures. *Neuropharmacology* 84: 1-12.
2. Gassowska-Dobrowolska, M., et al. 2020. Prenatal exposure to valproic acid affects microglia and synaptic ultrastructure in a brain-region-specific manner in young-adult male rats: relevance to autism spectrum disorders. *Int. J. Mol. Sci.* 21: 3576.
3. Avdic, U., et al. 2021. Levetiracetam and N-cadherin antibody alleviate brain pathology without reducing early epilepsy development after focal non-convulsive status epilepticus in rats. *Front. Neurol.* 12: 630154.

## RESEARCH USE

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