SANTA CRUZ BIOTECHNOLOGY, INC.

neuroligin 1 (F-5): sc-365111

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The Power to Question

BACKGROUND

Neuroligins 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 neuroligin family include neuroligin 1, neuroligin 2 and neuroligin 3. Neuroligins are expressed in excitatory neuronal synaptic clefts. Neuroligins play a role in the formation and remodeling of CNS synapses by binding to β-neurexins, a family of neuronal cell surface proteins. Neurexin 1β binds to the EF-hand domain of neuroligin 1 and requires calcium ion. Neuroligins 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 neuroligins. J. Biol. Chem. 271: 2676-2682.
2. Nguyen, T. and Sudhof, T.C. 1997. Binding properties of neuroligin 1 and neurexin 1β reveal fuction as heterophilic cell adhesion molecules. J. Biol. Chem. 272: 26032-26039.
3. Irie, M., et al. 1997. Binding of neurolgin to PSD-95. Science 277: 1511-1515.
4. Song, J.Y., et al. 1999. Neuroligin 1 is a postsynaptic cell-adhesion molecule of excitatory synapses. Proc. Natl. Acad. Sci. USA 96: 1100-1105.
5. Tsigelny, I., et al. 2000. Common EF-hand motifs in cholinesterases and neuroligins suggest a role for Ca^{2+} binding in cell surface associations. Protein Sci. 9: 180-185.
6. Philibert, R.A., et al. 2000. The structure and expression of the human neuroligin 3 gene. Gene 246: 303-310.

CHROMOSOMAL LOCATION

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

SOURCE

neuroligin 1 (F-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 33-61 near the N-terminus of neuroligin 1 of rat 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.

Blocking peptide available for competition studies, sc-365111 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

neuroligin 1 (F-5) is recommended for detection of neuroligin 1 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 neuroligin 1 siRNA (h): sc-42083, neuroligin 1 siRNA (m): sc-42084, neuroligin 1 siRNA (r): sc-156002, neuroligin 1 shRNA Plasmid (h): sc-42083-SH, neuroligin 1 shRNA Plasmid (m): sc-42084-SH, neuroligin 1 shRNA Plasmid (r): sc-156002-SH, neuroligin 1 shRNA (h) Lentiviral Particles: sc-42083-V, neuroligin 1 shRNA (m) Lentiviral Particles: sc-42084-V and neuroligin 1 shRNA (r) Lentiviral Particles: sc-156002-V.

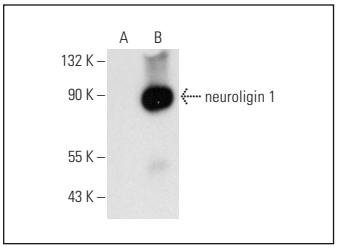
Molecular Weight of neuroligin 1: 101 kDa.

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

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



neuroligin 1 (F-5): sc-365111. Western blot analysis of neuroligin 1 expression in non-transfected: sc-117752 (**A**) and human neuroligin 1 transfected: sc-115314 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Sheibani, V., et al. 2022. The effects of neurosteroid allopregnanolone on synaptic dysfunction in the hippocampus in experimental parkinsonism rats: an electrophysiological and molecular study. Neuropeptides 92: 102229.

RESEARCH USE

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