

# neurologin 1 (F-7): sc-365087

## BACKGROUND

Neurologins 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 neurologin family include neurologin 1, neurologin 2 and neurologin 3. Neurologins are expressed in excitatory neuronal synaptic clefts. Neurologins 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 neurologin 1 and requires calcium ion. Neurologins 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 neurologins. *J. Biol. Chem.* 271: 2676-2682.
2. Nguyen, T. and Sudhof, T.C. 1997. Binding properties of neurologin 1 and neurexin 1 $\beta$  reveal function as heterophilic cell adhesion molecules. *J. Biol. Chem.* 272: 26032-26039.
3. Irie, M., et al. 1997. Binding of neurologin to PSD-95. *Science* 277: 1511-1515.
4. Song, J.Y., et al. 1999. Neurologin 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 neurologins suggest a role for Ca<sup>2+</sup> binding in cell surface associations. *Protein Sci.* 9: 180-185.
6. Philibert, R.A., et al. 2000. The structure and expression of the human neurologin 3 gene. *Gene* 246: 303-310.
7. Scheiffele, P., et al. 2000. Neurologin expressed in nonneuronal cells triggers presynaptic development in contacting axons. *Cell* 100: 657-669.

## CHROMOSOMAL LOCATION

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

## SOURCE

neurologin 1 (F-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 33-61 near the N-terminus of neurologin 1 of rat origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> 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-365087 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## RESEARCH USE

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

## APPLICATIONS

neurologin 1 (F-7) is recommended for detection of neurologin 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for neurologin 1 siRNA (h): sc-42083, neurologin 1 siRNA (m): sc-42084, neurologin 1 siRNA (r): sc-156002, neurologin 1 shRNA Plasmid (h): sc-42083-SH, neurologin 1 shRNA Plasmid (m): sc-42084-SH, neurologin 1 shRNA Plasmid (r): sc-156002-SH, neurologin 1 shRNA (h) Lentiviral Particles: sc-42083-V, neurologin 1 shRNA (m) Lentiviral Particles: sc-42084-V and neurologin 1 shRNA (r) Lentiviral Particles: sc-156002-V.

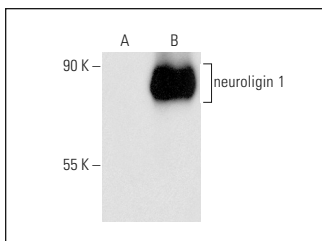
Molecular Weight of neurologin 1: 101 kDa.

Positive Controls: human cerebellum extract: sc-516706, HeLa whole cell lysate: sc-2200 or neurologin 1 (h): 293T Lysate: sc-115314.

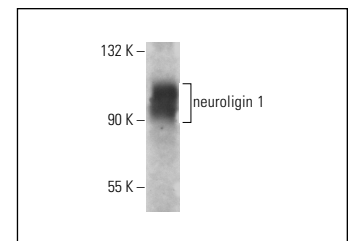
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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



neurologin 1 (F-7): sc-365087. Western blot analysis of neurologin 1 expression in non-transfected: sc-117752 (A) and human neurologin 1 transfected: sc-115314 (B) 293T whole cell lysates.



neurologin 1 (F-7): sc-365087. Western blot analysis of neurologin 1 expression in human cerebellum tissue extract.

## SELECT PRODUCT CITATIONS

1. Camporesi, E., et al. 2021. Neurologin-1 in brain and CSF of neurodegenerative disorders: investigation for synaptic biomarkers. *Acta Neuropathol. Commun.* 9: 19.

## STORAGE

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