

neuroigin 2 (R-16): sc-14089

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 β -neurexins, a family of neuronal cell surface proteins. Neurexin 1 β 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., et al. 1997. Binding properties of neuroigin 1 and neurexin 1 β 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.
4. Song, J.Y., et al. 1999. Neuroigin 1 is a postsynaptic cell-adhesion molecule of excitatory synapses. *Proc. Natl. Acad. Sci. USA* 96: 1100-1105.

CHROMOSOMAL LOCATION

Genetic locus: NLGN2 (human) mapping to 17p13.1; Nlgn2 (mouse) mapping to 11 B3.

SOURCE

neuroigin 2 (R-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of neuroigin 2 of rat origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-14089 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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 or our catalog for detailed protocols and support products.

APPLICATIONS

neuroigin 2 (R-16) is recommended for detection of neuroigin 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

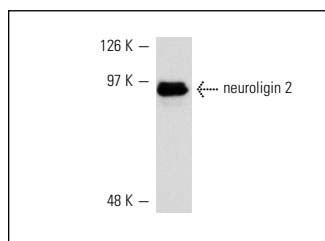
neuroigin 2 (R-16) is also recommended for detection of neuroigin 2 in additional species, including canine.

Suitable for use as control antibody for neuroigin 2 siRNA (h): sc-42085, neuroigin 2 siRNA (m): sc-42086, neuroigin 2 shRNA Plasmid (h): sc-42085-SH, neuroigin 2 shRNA Plasmid (m): sc-42086-SH, neuroigin 2 shRNA (h) Lentiviral Particles: sc-42085-V and neuroigin 2 shRNA (m) Lentiviral Particles: sc-42086-V.

Molecular Weight of neuroigin 2: 93 kDa.

Positive Controls: EOC 20 whole cell lysate: sc-364187.

DATA



neuroigin 2 (R-16): sc-14089. Western blot analysis of neuroigin 2 expression in EOC 20 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Levinson, J.N., et al. 2005. Neuroigins mediate excitatory and inhibitory synapse formation: involvement of PSD-95 and neurexin-1 β in neuroigin-induced synaptic specificity. *J. Biol. Chem.* 280: 17312-17319.
2. Sumita, K., et al. 2007. Synaptic scaffolding molecule (S-SCAM) membrane-associated guanylate kinase with inverted organization (MAGI)-2 is associated with cell adhesion molecules at inhibitory synapses in rat hippocampal neurons. *J. Neurochem.* 100: 154-166.
3. Belichenko, P.V., et al. 2009. Excitatory-inhibitory relationship in the fascia dentata in the Ts65Dn mouse model of Down syndrome. *J. Comp. Neurol.* 512: 453-466.
4. Lui, L., et al. 2010. Synaptic localization of neuroigin 2 in the rodent retina: comparative study with the dystroglycan-containing complex. *J. Neurosci. Res.* 88: 837-849.
5. Brennaman, L.H., et al. 2012. Polysialylated NCAM and ephrinA/EphA regulate synaptic development of GABAergic interneurons in prefrontal cortex. *Cereb. Cortex.* 23: 162-177.
6. Chugh, D., et al. 2015. Alterations in brain inflammation, synaptic proteins, and adult hippocampal neurogenesis during epileptogenesis in mice lacking synapsin2. *PLoS ONE* 10: e0132366.