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NLGN2 Antibody

Catalog # ASC11853

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q8NFZ4
Other Accession	NP_065846, 30840978
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	90820
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	NLGN2 antibody can be used for detection of NLGN2 by Western blot at 1 - 2 g/ml. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	57555
Other Names	Neuroligin-2, NLGN2, KIAA1366
Target/Specificity	NLGN2; NLGN2 antibody is human, mouse and rat reactive. At least two isoforms are known to exist; this antibody will detect both isoforms. NLGN2 antibody is predicted to not cross-react with other members of the NLGN protein family.
Reconstitution & Storage	NLGN2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	NLGN2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	NLGN2
Synonyms	KIAA1366
Function	Transmembrane scaffolding protein involved in cell-cell interactions via its interactions with neurexin family members. Mediates cell-cell interactions both in neurons and in other types of cells, such as Langerhans beta cells. Plays a role in synapse function and synaptic signal transmission, especially via gamma-aminobutyric acid receptors (GABA(A) receptors). Functions by recruiting and clustering synaptic proteins. Promotes clustering of postsynaptic GABRG2 and GPHN. Promotes clustering of postsynaptic LHFPL4

	(By similarity). Modulates signaling by inhibitory synapses, and thereby plays a role in controlling the ratio of signaling by excitatory and inhibitory synapses and information processing. Required for normal signal amplitude from inhibitory synapses, but is not essential for normal signal frequency. May promote the initial formation of synapses, but is not essential for this. In vitro, triggers the de novo formation of presynaptic structures. Mediates cell-cell interactions between Langerhans beta cells and modulates insulin secretion (By similarity).
Cellular Location	Cell membrane; Single-pass type I membrane protein. Postsynaptic cell membrane {ECO:0000250|UniProtKB:Q62888}; Single-pass type I membrane protein. Presynaptic cell membrane {ECO:0000250|UniProtKB:Q62888}; Single-pass type I membrane protein. Cell projection, dendritic spine {ECO:0000250|UniProtKB:Q62888}. Cell projection, dendrite {ECO:0000250|UniProtKB:Q62888}. Synapse {ECO:0000250|UniProtKB:Q62888} Note=Detected at postsynaptic membranes in brain. Colocalizes with GPHN and ARHGEF9 at neuronal cell membranes (By similarity). Localized at presynaptic membranes in retina. Colocalizes with GABRG2 at inhibitory synapses in the retina. Localizes to dendritic membrane (By similarity). {ECO:0000250|UniProtKB:Q62888}
Tissue Location	Expressed in the blood vessel walls. Detected in colon, brain and pancreas islets of Langerhans (at protein level) Detected in brain, and at lower levels in pancreas islet beta cells

Background

Neuroligin 2 (NLGN2) is a member of a family of neuronal cell surface proteins that localize to the post-synaptic membrane (1,2). Neuroligins are thought to act as splice site-specific ligands for beta-neurexins and may be involved in the formation and remodeling of central nervous system synapses (2). NLGN2 has been shown to control perisomatic inhibitory synapse maturation together with gephyrin and collybistin, thereby regulating GABA receptor clustering on neurons (3,4). NLGN2 also exhibits differential functions at different types of inhibitory synapses on the same postsynaptic neuron (5).

References

Ichtchenko K, Nguyen T, and Sudhof TC. Structures, alternative splicing, and neurexin binding of multiple neuroligins. J. Biol. Chem. 1996; 271:2676-82.

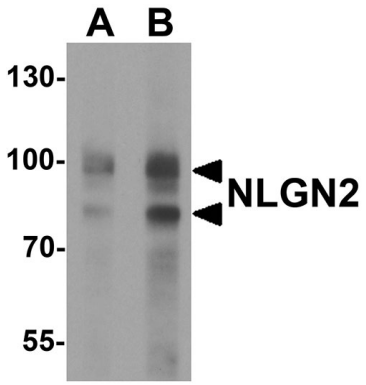
Bang ML and Owczarek S. A matter of balance: role of neurexin and neuroligin at the synapse. Neurochem. Res. 2013; 38:1174-89.

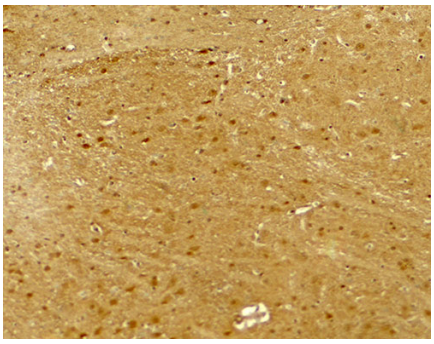
Poulopoulos A, Aramuni G, Meyer G, et al. Neuroligin 2 drives postsynaptic assembly at perisomatic inhibitiory synapses through gephyrin and collybistin. Neuron 2009; 63:628-42.

Jedlicka P, Hoon M, Poulopoulos T, et al. Increased dentate gyrus excitability in neuroligin-2-deficient mice in vivo. Cereb. Cortex 2011; 21:357-67.

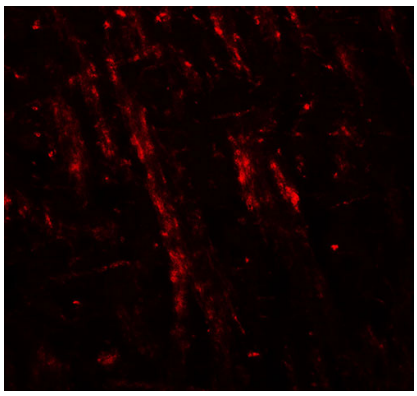
Images

Western blot analysis of NLGN2 in rat brain tissue lysate with NLGN2 antibody at (A) 1 and (B) 2 µg/ml.





Immunohistochemistry of NLGN2 in mouse brain tissue with NLGN2 antibody at 5 µg/ml.



Immunofluorescence of NLGN2 in mouse brain tissue with NLGN2 antibody at 20 µg/ml.

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