Synaptic Systems

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Neuroligin 2

Cat.No. 129 203; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Rabbit serum albumin was added for stabilization. For reconstitution add 50 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	**WB**: 1 : 1000 (AP staining) (see remarks) **IP**: yes **ICC**: 1 : 500 **IHC**: yes **IHC-P/FFPE**: not tested yet **EM**: yes **ELISA**: yes (see remarks)
Immunogen	Synthetic peptide corresponding to AA 732 to 749 from rat Neuroligin2 (UniProt Id: Q62888)
Reactivity	Reacts with: human (Q8NFZ4), rat (Q62888), mouse (Q69ZK9), monkey, ape, cow. Other species not tested yet.
Specificity	Specific for neuroligin 2, no cross reactivity to neuroligins 1, 3, 4. (K.O. verified)
Remarks	**WB**: The crude antiserum (cat. no. 129 202) produces stronger signals. **ELISA**: Suitable as detector antibody for sandwich-ELISA with cat. no. 129 011 as capture antibody (protocol for sandwich-ELISA).

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Neuroligins form a family of postsynaptic cell surface molecules that interact with β-neurexins. They are 110-120 kDa polypeptides with homology to acetylcholine esterase. Neuroligin 1 and neuroligin 3 are specifically localized to post-synaptic densities of excitatory synapses whereas **neuroligin 2** is found exclusively on inhibitory synapses.
Mutations in neuroligin 3 and neuroligin 4 have been implicated with a rare, heritable form of autism.

Selected References SYSY Antibodies

Differential regulation of neurexin at glutamatergic and GABAergic synapses.
Pregno G, Frola E, Graziano S, Patrizi A, Bussolino F, Arese M, Sassoè-Pognetto M
Frontiers in cellular neuroscience (2013) 7: 35. **WB, IP**

Gephyrin regulates GABAergic and glutamatergic synaptic transmission in hippocampal cell cultures.
Varley ZK, Pizzarelli R, Antonelli R, Stancheva SH, Kneussel M, Cherubini E, Zacchi P
The Journal of biological chemistry (2011) 286(23): 20942-51. **WB, ICC**

Tonic inhibition of accumbal spiny neurons by extrasynaptic α4βδ GABAA receptors modulates the actions of psychostimulants.
Maguire EP, Macpherson T, Swinny JD, Dixon CI, Herd MB, Belelli D, Stephens DN, King SL, Lambert JJ
The Journal of neuroscience : the official journal of the Society for Neuroscience (2014) 34(3): 823-38. **IHC; tested species: mouse**

Distinct axo-somato-dendritic distributions of three potassium channels in CA1 hippocampal pyramidal cells.
Kirizs T, Kerti-Szigeti K, Lorincz A, Nusser Z
The European journal of neuroscience (2014) 39(11): 1771-83. **EM; tested species: rat**

Changes in synaptic proteins precede neurodegeneration markers in preclinical Alzheimer's disease cerebrospinal fluid.
Lleó A, Núñez-Llaves R, Alcolea D, Chiva C, Balateu-Paños D, Colom-Cadena M, Gomez-Giro G, Muñoz L, Querol-Vilaseca M, Pegueroles J, Rami L, et al.
Molecular & cellular proteomics : MCP (2019) : . **WB; tested species: human**

Clptm1 Limits Forward Trafficking of GABAA Receptors to Scale Inhibitory Synaptic Strength.
Ge Y, Kang Y, Cassidy RM, Moon KM, Lewis R, Wong ROL, Foster LJ, Craig AM
Neuron (2018) 97(3): 596-610.e8. **ICC; tested species: mouse**

GABAergic deficits and schizophrenia-like behaviors in a mouse model carrying patient-derived neuroligin-2 R215H mutation.
Jiang DY, Wu Z, Forsyth CT, Hu Y, Yee SP, Chen G
Molecular brain (2018) 11(1): 31. **IHC; tested species: mouse**

Isoform-specific cleavage of neuroligin-3 reduces synapse strength.
Bemben MA, Nguyen TA, Li Y, Wang T, Nicoll RA, Roche KW
Molecular psychiatry (2018) : . **WB; tested species: rat**

UPR activation specifically modulates glutamate neurotransmission in the cerebellum of a mouse model of autism.
Trobiani L, Favaloro FL, Di Castro MA, Di Mattia M, Cariello M, Miranda E, Canterini S, De Stefano ME, Comoletti D, Limatola C, De Jaco A, et al.
Neurobiology of disease (2018) : . **WB; tested species: mouse**

Transient oxytocin signaling primes the development and function of excitatory hippocampal neurons.
Ripamonti S, Ambrozkiewicz MC, Guzzi F, Gravati M, Biella G, Bormuth I, Hammer M, Tuffy LP, Sigler A, Kawabe H, Nishimori K, et al.
eLife (2017) 6: . **ICC; tested species: mouse**

GARLH Family Proteins Stabilize GABAA Receptors at Synapses.
Yamasaki T, Hoyos-Ramirez E, Martenson JS, Morimoto-Tomita M, Tomita S
Neuron (2017) 93(5): 1138-1152.e6. **ICC**

Synaptic Contacts Enhance Cell-to-Cell Tau Pathology Propagation.
Calafate S, Buist A, Miskiewicz K, Vijayan V, Daneels G, de Strooper B, de Wit J, Verstreken P, Moechars D
Cell reports (2015) 11(8): 1176-83. **WB; KD verified; tested species: rat**

Hippocampal neuroligin-2 links early-life stress with impaired social recognition and increased aggression in adult mice.
Kohl C, Wang XD, Grosse J, Fournier C, Harbich D, Westerholz S, Li JT, Bacq A, Sippel C, Hausch F, Sandi C, et al.
Psychoneuroendocrinology (2015) 55: 128-43. **WB**

Gephyrin clusters are absent from small diameter primary afferent terminals despite the presence of GABA(A) receptors.
Lorenzo LE, Godin AG, Wang F, St-Louis M, Carbonetto S, Wiseman PW, Ribeiro-da-Silva A, De Koninck Y
The Journal of neuroscience : the official journal of the Society for Neuroscience (2014) 34(24): 8300-17. **IHC; tested species: rat**

Molecular and functional diversity of GABA-A receptors in the enteric nervous system of the mouse colon.
Seifi M, Brown JF, Mills J, Bhandari P, Belelli D, Lambert JJ, Rudolph U, Swinny JD
The Journal of neuroscience : the official journal of the Society for Neuroscience (2014) 34(31): 10361-78. **IHC**

Neuroligin 2 is expressed in synapses established by cholinergic cells in the mouse brain.
Takács VT, Freund TF, Nyiri G
PloS one (2013) 8(9): e72450. **IHC; tested species: mouse**

Promoter-like sequences regulating transcriptional activity in neurexin and neuroligin genes.
Runkel F, Rohlmann A, Reissner C, Brand SM, Missler M
Journal of neurochemistry (2013) 127(1): 36-47. **WB**