

## Neurexin 1/2/3

Cat.No. 175 003; 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 <sub>2</sub> O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	<b>WB:</b> 1 : 500 up to 1 : 1000 (AP staining) (see remarks) <b>IP:</b> not tested yet <b>ICC:</b> not recommended <b>IHC:</b> not tested yet <b>IHC-P/FFPE:</b> not tested yet
Immunogen	Recombinant protein corresponding to AA 1459 to 1514 and 1657 to 1712 and 1524 to 1578 from rat Neurexin1/2/3
Reactivity	Reacts with: rat (Q63372, Q63376, Q07310), mouse (Q9CS84, E9PUM9, Q8C985). Other species not tested yet.
Specificity	Due to the homology of the cytoplasmic tails of α- and β-neurexins 1, 2 and 3, this antiserum detects all isoforms and their corresponding splice-variants.
Remarks	<b>WB:</b> Unboiled samples yield stronger signals.

### TO BE USED IN VITRO / FOR RESEARCH ONLY

### NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

α- and β-**neurexins** are single pass transmembrane proteins with a short cytoplasmic C-terminus and a long extracellular N-terminal part. In α-neurexins the extracellular sequence is substantially longer than in β-neurexins. Alternative splicing of the N-terminal part even confers more complexity to this protein family suggesting distinct binding partners for the extracellular regions. In contrast, the C-termini are highly conserved in the different isoforms and splice-variants and they share overlapping cytosolic binding partners.

Neurexins are receptor like molecules that form heterologous cell contacts with post-synaptic cell surface proteins at synaptic connections (e.g. β-neurexins with neuroligins). They also serve as receptors for the black widow toxin α-latrotoxin which induces neurotransmitter release.

### Selected References SYSY Antibodies

Processing of the synaptic cell adhesion molecule neurexin-3beta by Alzheimer disease alpha- and gamma-secretases.  
Bot N, Schweizer C, Ben Halima S, Fraering PC  
The Journal of biological chemistry (2011) 286(4): 2762-73. **WB**

Synapse formation regulated by protein tyrosine phosphatase receptor T through interaction with cell adhesion molecules and Fyn.

Lim SH, Kwon SK, Lee MK, Moon J, Jeong DG, Park E, Kim SJ, Park BC, Lee SC, Ryu SE, Yu DY, et al.  
The EMBO journal (2009) 28(22): 3564-78. **WB**

### Selected General References

Synaptic arrangement of the neuroligin/beta-neurexin complex revealed by X-ray and neutron scattering.  
Comoletti D, Grishaev A, Whitten AE, Tsigelny I, Taylor P, Trehwella J  
Structure (London, England : 1993) (2007) 15(6): 693-705.

Neurexin-neuroligin signaling in synapse development.  
Craig AM, Kang Y  
Current opinion in neurobiology (2007) 17(1): 43-52.

Alternative splicing controls selective trans-synaptic interactions of the neuroligin-neurexin complex.  
Chih B, Gollan L, Scheiffele P  
Neuron (2006) 51(2): 171-8.

The neuroligin and neurexin families: from structure to function at the synapse.  
Lisé MF, El-Husseini A  
Cellular and molecular life sciences : CMLS (2006) 63(16): 1833-49.

Expression patterns of neurexin-1 and neuroligins in brain and retina of the chick embryo: Neuroligin-3 is absent in retina.  
Paraoanu LE, Becker-Roeck M, Christ E, Layer PG  
Neuroscience letters (2006) 395(2): 114-7.

Synaptic targeting of neuroligin is independent of neurexin and SAP90/PSD95 binding.  
Dresbach T, Neeb A, Meyer G, Gundelfinger ED, Brose N  
Molecular and cellular neurosciences (2004) 27(3): 227-35.

Characterization of the interaction of a recombinant soluble neuroligin-1 with neurexin-1beta.  
Comoletti D, Flynn R, Jennings LL, Chubykin A, Matsumura T, Hasegawa H, Südhof TC, Taylor P  
The Journal of biological chemistry (2003) 278(50): 50497-505.

Neurexin mediates the assembly of presynaptic terminals.  
Dean C, Scholl FG, Choih J, DeMaria S, Berger J, Isacoff E, Scheiffele P  
Nature neuroscience (2003) 6(7): 708-16.

Structure and evolution of neurexin genes: insight into the mechanism of alternative splicing.  
Tabuchi K, Südhof TC  
Genomics (2002) 79(6): 849-59.

Genetic analysis of alpha-latrotoxin receptors reveals functional interdependence of CIRL/latrophilin 1 and neurexin 1 alpha.  
Tobaben S, Südhof TC, Stahl B  
The Journal of biological chemistry (2002) 277(8): 6359-65.

alpha-latrotoxin forms calcium-permeable membrane pores via interactions with latrophilin or neurexin.  
Van Renterghem C, Iborra C, Martin-Moutot N, Lelianaova V, Ushkaryov Y, Seagar M  
The European journal of neuroscience (2000) 12(11): 3953-62.

Neurexin I alpha is a major alpha-latrotoxin receptor that cooperates in alpha-latrotoxin action.  
Geppert M, Khvotchev M, Krasnoperov V, Goda Y, Missler M, Hammer RE, Ichtchenko K, Petrenko AG, Südhof TC  
The Journal of biological chemistry (1998) 273(3): 1705-10.

Structures, alternative splicing, and neurexin binding of multiple neuroligins.  
Ichtchenko K, Nguyen T, Südhof TC  
The Journal of biological chemistry (1996) 271(5): 2676-82.

On the structure of the 'synaptosome'. Evidence for a neurexin/synaptotagmin/syntaxin/Ca<sup>2+</sup> channel complex.  
O'Connor VM, Shamotienko O, Grishin E, Betz H  
FEBS letters (1993) 326(1-3): 255-60.