

Neurexin 1

Cat.No. 175 103; 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 ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	WB: 1 : 500 up to 1 : 1000 (AP staining) (see remarks) IP: not tested yet ICC: not recommended IHC: not recommended IHC-P/FFPE: not tested yet
Immunogen	Recombinant protein corresponding to AA 1328 to 1421 from rat Neurexin1 (UniProt Id: Q63372)
Reactivity	Reacts with: rat (Q63372), mouse (Q9CS84). Other species not tested yet.
Specificity	Specific for neurexin 1. The epitope is present in α- and β-neurexin 1.
Remarks	WB: 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 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, Trewella 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/syntaxin/Ca²⁺ channel complex.
O'Connor VM, Shamotienko O, Grishin E, Betz H
FEBS letters (1993) 326(1-3): 255-60.