

## Neurexin1/2/3

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. Albumin and azide were added for stabilization. For <b>reconstitution</b> add 50 µl H <sub>2</sub> O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
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:</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. K.O. PubMed: <a href="https://pubmed.ncbi.nlm.nih.gov/30104341/">30104341</a>
Remarks	<b>WB:</b> Non-boiled samples yield stronger signals.

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

Access the online factsheet including applicable protocols at <https://sysy.com/product/175003> or scan the QR-code.



### Background

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 for 175 003

A novel synaptic junction preparation for the identification and characterization of cleft proteins.

Burch A, Tao-Cheng JH, Dosemeci A

PLoS one (2017) 123: e0174895. . **WB, EM; tested species: rat**

Cochlear ribbon synapse maturation requires Nlgn1 and Nlgn3.

Ramirez MA, Ninoyu Y, Miller C, Andrade LR, Edassery S, Bomba-Warczak E, Ortega B, Manor U, Rutherford MA, Friedman RA, Savas JN, et al.

iScience (2022) 258: 104803. . **IHC; tested species: mouse**

Neuroigin-1-Modified Electrodes for Specific Coupling with a Presynaptic Neuronal Membrane.

Jeon J, Yoon SH, Oh MA, Cho W, Kim JY, Shin CI, Kim EJ, Chung TD

ACS applied materials & interfaces (2021) 1318: 21944-21953. . **ICC; tested species: rat**

SIPA1L1/SPAR1 interacts with the neurabin family of proteins and is involved in GPCR signaling.

Matsuura K, Kobayashi S, Konno K, Yamasaki M, Horiuchi T, Senda T, Hayashi T, Satoh K, Arima-Yoshida F, Iwasaki K, Negishi L, et al.

The Journal of neuroscience : the official journal of the Society for Neuroscience (2022) : . . **WB; tested species: mouse**

Diverging Effects of Adolescent Ethanol Exposure on Tripartite Synaptic Development across Prefrontal Cortex Subregions.

Walker CD, Sexton HG, Hyde J, Greene B, Risher ML

Cells (2022) 1119: . . **IHC; tested species: rat**

Selective expression of the neurexin substrate for presenilin in the adult forebrain causes deficits in associative memory and presynaptic plasticity.

Sánchez-Hidalgo AC, Arias-Aragón F, Romero-Barragán MT, Martín-Cuevas C, Delgado-García JM, Martínez-Mir A, Scholl FG

Experimental neurology (2021) 347: 113896. . **WB; tested species: mouse**

α-Neurexins Together with α2δ-1 Auxiliary Subunits Regulate Ca<sup>2+</sup> Influx through Cav2.1 Channels.

Brockhaus J, Schreitmüller M, Repetto D, Klatt O, Reissner C, Elmslie K, Heine M, Missler M

The Journal of neuroscience : the official journal of the Society for Neuroscience (2018) 3838: 8277-8294. . **WB; KO verified; tested species: mouse**

Physical Interactions and Functional Relationships of Neuroligin 2 and Midbrain Serotonin Transporters.

Ye R, Quinlan MA, Iwamoto H, Wu HH, Green NH, Jetter CS, McMahon DG, Veestra-Vanderweele J, Levitt P, Blakely RD

Frontiers in synaptic neuroscience (2015) 7: 20. . **WB; tested species: mouse**

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) 2864: 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) 2822: 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, Trewthella J

Structure (London, England : 1993) (2007) 156: 693-705. .

Neurexin-neuroligin signaling in synapse development.

Craig AM, Kang Y

Current opinion in neurobiology (2007) 171: 43-52. .

## FAQ - How should I store my antibody?

### Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

### Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

### Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

### Product Specific Hints for Storage

#### Control proteins / peptides

- Store at -20°C to -80°C.

#### Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

#### Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

#### Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

## Avoid repeated freeze-thaw cycles for all antibodies!

## FAQ - How should I reconstitute my antibody?

### Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.