SYSY Antibodies

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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 **reconstitution** add 50 µl H_2O 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	**WB**: 1 : 500 up to 1 : 1000 (AP staining) (see remarks) **IP**: not tested yet **ICC**: not recommended **IHC**: not tested yet **IHC-P (FFPE)**: 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. validated PubMed: 30104341
Remarks	**WB**: To avoid protein aggregation, do not heat samples for SDS-PAGE. Non-boiled samples yield stronger signals.

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

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**

Neuroligin-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**

Impaired synaptic plasticity in behaving mice by inactivation of presenilin and accumulation of the neurexin gamma-secretase proteolytic substrate.
Arias-Aragón F, Sánchez-Hidalgo AC, Gruart A, Martinez-Mir A, Delgado-García JM, Scholl FG
Experimental neurology (2025) 389: 115241. . **WB; tested species: mouse**

Tandem Mass Tag LC-MS/MS of Aqueous Humor From Individuals With Type 2 Diabetes Without Retinopathy Reveals Early Dysregulation of Synaptic Proteins.
Sachdeva MM, Lee Y, Unlu EK, Koseoglu ND, Cha E, Wang J, Prescott CR, Eghrari AO, Na CH
Investigative ophthalmology & visual science (2024) 653: 16. . **WB; tested species: human**

Altered expression of synaptic proteins and adhesion molecules in the hippocampus and cortex following the onset of diabetes in nonobese diabetic mice.
Yokokawa T, Kido K, Sato K, Hayashi T, Fujita S
Physiological reports (2023) 118: e15673. . **WB; tested species: mouse**

A delay in vesicle endocytosis by a C-terminal fragment of N-cadherin enhances Aβ synaptotoxicity.
Teng Z, Kartalou GI, Dagar S, Fraering PC, Lessmann V, Gottmann K
Cell death discovery (2023) 91: 444. . **WB; tested species: mouse**

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, Martinez-Mir A, Scholl FG
Experimental neurology (2021) 347: 113896. . **WB; tested species: mouse**

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

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.