SYSY Antibodies

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Neuroligin2

Cat.No. 129 511; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For **reconstitution** add 100 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 : 1000 (AP staining) **IP**: yes **ICC**: 1 : 100 up to 1 : 500 **IHC**: 1 : 500 **IHC-P (FFPE)**: 1 : 200 **Clarity**: external data (see remarks)
Clone	5E6
Subtype	IgG1 (κ light chain)
Immunogen	Synthetic peptide corresponding to AA 750 to 767 from rat Neuroligin2 (UniProt Id: Q62888)
Reactivity	Reacts with: human (Q8NFZ4), rat (Q62888), mouse (Q69ZK9). Other species not tested yet.
Specificity	K.O. validated PubMed: 29107521
Remarks	**Clarity**: This antibody has been successfully applied and published for this method by customers (see application-specific references).

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

Background

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. Neuroligin1 and neuroligin3 are specifically localized to post-synaptic densities of excitatory synapses whereas **neuroligin2** is found exclusively on inhibitory synapses.
Mutations in neuroligin3 and neuroligin4 have been implicated with a rare, heritable form of autism.

Selected References for 129 511

Molecular Dissection of Neuroligin 2 and Slitrk3 Reveals an Essential Framework for GABAergic Synapse Development.
Li J, Han W, Pelkey KA, Duan J, Mao X, Wang YX, Craig MT, Dong L, Petralia RS, McBain CJ, Lu W, et al.
Neuron (2017) 964: 808-826.e8. . **WB, ICC, IHC; KO verified; tested species: mouse**

Analysis of neurexin-neuroligin complexes supports an isoform-specific role for beta-neurexin-1 dysfunction in a mouse model of autism.
Arias-Aragón F, Robles-Lanuza E, Sánchez-Gómez Á, Martinez-Mir A, Scholl FG
Molecular brain (2025) 181: 20. . **WB, ICC; tested species: human,rat**

Sorting nexin 27 rescues neuroligin 2 from lysosomal degradation to control inhibitory synapse number.
Binda C, Nakamura Y, Henley J, Wilkinson K
The Biochemical journal (2019) : . . **WB, ICC; tested species: rat**

Loss-of-consciousness: sources of GABAergic input to the mesopontine tegmental anesthesia area.
Ibraheem A, Vaso K, Minert A, Yatziv SL, Baron M, Devor M
Frontiers in neuroscience (2025) 19: 1594984. . **CLARITY; tested species: rat**

Group 2 innate lymphoid cells drive inhibitory synapse formation with lasting effects on learning and memory.
Steffen J, Deshpande D, Düsedau HP, Schmitz J, Figueiredo CA, Velleman L, Pitzer C, Klose CSN, Dunay IR
Journal of neuroinflammation (2025) 221: 163. . **FACS; tested species: mouse**

Spatial proteomics in neurons at single-protein resolution.
Unterauer EM, Shetab Boushehri S, Jevdokimenko K, Masullo LA, Ganji M, Sograte-Idrissi S, Kowalewski R, Strauss S, Reinhardt SCM, Perovic A, Marr C, et al.
Cell (2024) 1877: 1785-1800.e16. . **DNA_PAINT; tested species: rat**

Persisting Region-Specific Microglia Activation and Synaptic Imbalance During Remission in a DSS-Induced Colitis Model.
Morton L, Villafuerte LE, Garza AP, Lindemann N, Wider-Eberspächer E, Bruder D, Dunay IR
Glia (2026) 7411: e70208. . **FACS; tested species: mouse**

Neuroligin-2-Dependent Adhesion Defines a Molecular Checkpoint for Inhibitory Synaptic Plasticity.
Lech A, Wiera G, Mozrzymas JW
The Journal of neuroscience : the official journal of the Society for Neuroscience (2026) 4616: . . **IHC; tested species: mouse**

Chronic stress induces depression through MDGA1-Neuroligin2 mediated suppression of inhibitory synapses in the lateral habenula.
Wang X, Wei H, Hu Z, Jiang J, Dong X, Zhu J, Chen H, Brose N, Lipstein N, Xu T, Connor SA, et al.
Theranostics (2025) 155: 1842-1863. . **WB; tested species: mouse**

Neurosteroid Modulation of Synaptic and Extrasynaptic GABAA Receptors of the Mouse Nucleus Accumbens.
Mitchell SJ, Phillips GD, Tench B, Li Y, Belelli D, Martin SJ, Swinny JD, Kelly L, Atack JR, Paradowski M, Lambert JJ, et al.
Biomolecules (2024) 144: . . **IHC; tested species: mouse**

miRNA-mediated control of gephyrin synthesis drives sustained inhibitory synaptic plasticity.
Welle TM, Rajgor D, Kareemo DJ, Garcia JD, Zych SM, Wolfe SE, Gookin SE, Martinez TP, Dell'Acqua ML, Ford CP, Kennedy MJ, et al.
EMBO reports (2024) 2511: 5141-5168. . **WB; tested species: rat**

The developmental timing of spinal touch processing alterations predicts behavioral changes in genetic mouse models of autism spectrum disorders.
Tasnim A, Alkislar I, Hakim R, Turecek J, Abdelaziz A, Orefice LL, Ginty DD
Nature neuroscience (2024) : . . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/129511 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.