SYSY Antibodies

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Neuroligin1/2/3/4

Cat.No. 129 211; 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**: not tested yet **ICC**: 1 : 200 up to 1 : 500 **IHC**: not recommended **IHC-P (FFPE)**: not tested yet
Clone	87H9
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to AA 710 to 824 from mouse Neuroligin3 (UniProt Id: Q8BYM5)
Reactivity	Reacts with: rat (Q62765, Q62888, Q62889,), mouse (Q99K10, Q69ZK9, Q8BYM5, B0F2B4). Other species not tested yet.
Specificity	**WB**: Recognizes neuroligin 2 and 3. **ICC**: Stains predominantly neuroligin 2 in cultured hippocampus neurons. Detects transiently expressed GFP fusion proteins comprising the cytoplasmic tails of neuroligins 1-4. K.O. validated
Matching control	129-1P

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 129 211

S-SCAM is essential for synapse formation.
Wittenmayer N, Petkova-Tuffy A, Borgmeyer M, Lee C, Becker J, Böning A, Kügler S, Rhee J, Viotti JS, Dresbach T
Frontiers in cellular neuroscience (2023) 17: 1182493. . **ICC; tested species: rat**

Effects of chronic exposure to haloperidol, olanzapine or lithium on SV2A and NLGN synaptic puncta in the rat frontal cortex.
Halff EF, Cotel MC, Natesan S, McQuade R, Ottley CJ, Srivastava DP, Howes OD, Vernon AC
Behavioural brain research (2021) 405: 113203. . **IHC; tested species: rat**

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. . **EM; tested species: rat**

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**

Selected General References

Neuroligin 1 is a postsynaptic cell-adhesion molecule of excitatory synapses.
Song JY et al. Proc. Natl. Acad. Sci. U.S.A. (1999) PubMed:9927700

Activity-dependent validation of excitatory versus inhibitory synapses by neuroligin-1 versus neuroligin-2.
Chubykin AA et al. Neuron (2007) PubMed:17582332

Dissection of synapse induction by neuroligins: effect of a neuroligin mutation associated with autism.
Chubykin AA et al. J. Biol. Chem. (2005) PubMed:15797875

Neuroligin 2 is exclusively localized to inhibitory synapses.
Varoqueaux F et al. Eur. J. Cell Biol. (2004) PubMed:15540461

Synaptic targeting of neuroligin is independent of neurexin and SAP90/PSD95 binding.
Dresbach T et al. Mol. Cell. Neurosci. (2004) PubMed:15519238

The making of neurexins.
Missler M et al. J. Neurochem. (1998) PubMed:9751164

Structures, alternative splicing, and neurexin binding of multiple neuroligins.
Ichtchenko K et al. J. Biol. Chem. (1996) PubMed:8576240

Neuroligin 1: a splice site-specific ligand for beta-neurexins.
Ichtchenko K et al. Cell (1995) PubMed:7736595

The synaptic vesicle cycle: a cascade of protein-protein interactions.
Südhof TC et al. Nature (1995) PubMed:7791897

Access the online factsheet including applicable protocols at https://sysy.com/product/129211 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.