SYSY Antibodies

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Neuroligin1/2/3/4

Cat.No. 129 011; 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**: not recommended **IHC**: not recommended **IHC-P (FFPE)**: not tested yet
Clone	4F9
Subtype	IgG2a (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 695 from rat Neuroligin1 (UniProt Id: Q62765)
Reactivity	Reacts with: rat (Q62765, Q62888, Q62889,), mouse (Q99K10, Q69ZK9, Q8BYM5, B0F2B4). Other species not tested yet.
Specificity	Recognizes rat and mouse neuroligins 1-3 and mouse neuroligin 4. K.O. validated

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 129 011

The synaptic proteins neurexins and neuroligins are widely expressed in the vascular system and contribute to its functions.
Bottos A, Destro E, Rissone A, Graziano S, Cordara G, Assenzio B, Cera MR, Mascia L, Bussolino F, Arese M
Proceedings of the National Academy of Sciences of the United States of America (2009) 10649: 20782-7. . **IHC, WB, IP; tested species: chicken**

Synapsin-dependent reserve pool of synaptic vesicles supports replenishment of the readily releasable pool under intense synaptic transmission.
Vasileva M, Horstmann H, Geumann C, Gitler D, Kuner T
The European journal of neuroscience (2012) 368: 3005-20. . **ELISA**

Truncated tau deregulates synaptic markers in rat model for human tauopathy.
Jadhav S, Katina S, Kovac A, Kazmerova Z, Novak M, Zilka N
Frontiers in cellular neuroscience (2015) 9: 24. . **WB**

The association of GPR85 with PSD-95-neuroligin complex and autism spectrum disorder: a molecular analysis.
Fujita-Jimbo E, Tanabe Y, Yu Z, Kojima K, Mori M, Li H, Iwamoto S, Yamagata T, Momoi MY, Momoi T
Molecular autism (2015) 6: 17. . **WB**

Neuroligin 1 is dynamically exchanged at postsynaptic sites.
Schapitz IU, Behrend B, Pechmann Y, Lappe-Siefke C, Kneussel SJ, Wallace KE, Stempel AV, Buck F, Grant SG, Schweizer M, Schmitz D, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 3038: 12733-44. . **WB; tested species: rat**

Postsynaptic neuroligin enhances presynaptic inputs at neuronal nicotinic synapses.
Conroy WG, Nai Q, Ross B, Naughton G, Berg DK
Developmental biology (2007) 3071: 79-91. . **WB**

A mutation linked with autism reveals a common mechanism of endoplasmic reticulum retention for the alpha,beta-hydrolase fold protein family.
De Jaco A, Comoletti D, Kovarik Z, Gaietta G, Radic Z, Lockridge O, Ellisman MH, Taylor P
The Journal of biological chemistry (2006) 28114: 9667-76. . **WB**

Control of excitatory and inhibitory synapse formation by neuroligins.
Chih B, Engelman H, Scheiffele P
Science (New York, N.Y.) (2005) 3075713: 1324-8. . **WB**

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

Access the online factsheet including applicable protocols at https://sysy.com/product/129011 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.