SYSY Antibodies

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Liprin-α3

Cat.No. 169 102; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For **reconstitution** add 200 µl H_2O, then aliquot and store at -20°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 : 500 **IHC**: not tested yet **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 463 to 604 from mouse Liprin-α3 (UniProt Id: P60469)
Reactivity	Reacts with: human (O75145), rat (Q91Z79), mouse (P60469). No signal: zebrafish. Other species not tested yet.
Specificity	Specific for liprin-α 3, no cross reaction to isoforms 1, 2, 4.
Matching control	169-1P

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

Background

The **liprin-α/Syd 2** protein family was initially identified as binding partners of the LAR family of receptor protein-tyrosine phosphatases.
Liprin-α proteins are multidomain proteins which are involved in the development of presynaptic active zones. Four isoforms of liprin-α have been described, so far and all of them interact with the RIM binding partners ERC 1b and ERC 2.
All four isoforms of liprin-α have also been identified as members of the MALS complex composed of CASK, Mint1 and Velis. This complex has been reported to be crucial for synaptic vesicle exocytosis.

Selected References for 169 102

RIM1α SUMOylation is required for fast synaptic vesicle exocytosis.
Girach F, Craig TJ, Rocca DL, Henley JM
Cell reports (2013) 55: 1294-301. . **WB; tested species: rat**

Presynaptic accumulation of α-synuclein causes synaptopathy and progressive neurodegeneration in Drosophila.
Bridi JC, Bereczki E, Smith SK, Poças GM, Kottler B, Domingos PM, Elliott CJ, Aarsland D, Hirth F
Brain communications (2021) 32: fcab049. . **WB; tested species: human**

Presynaptic PTPσ regulates postsynaptic NMDA receptor function through direct adhesion-independent mechanisms.
Kim K, Shin W, Kang M, Lee S, Kim D, Kang R, Jung Y, Cho Y, Yang E, Kim H, Bae YC, et al.
eLife (2020) 9: . . **WB; tested species: mouse**

Auxiliary α2δ1 and α2δ3 Subunits of Calcium Channels Drive Excitatory and Inhibitory Neuronal Network Development.
Bikbaev A, Ciuraszkiewicz-Wojciech A, Heck J, Klatt O, Freund R, Mitlöhner J, Enrile Lacalle S, Sun M, Repetto D, Frischknecht R, Ablinger C, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2020) 4025: 4824-4841. . **WB; tested species: mouse**

Decreased Anxiety-Related Behaviour but Apparently Unperturbed NUMB Function in Ligand of NUMB Protein-X (LNX) 1/2 Double Knockout Mice.
Lenihan JA, Saha O, Heimer-McGinn V, Cryan JF, Feng G, Young PW
Molecular neurobiology (2017) 5410: 8090-8109. . **WB; tested species: mouse**

Liprin-α controls stress fiber formation by binding to mDia and regulating its membrane localization.
Sakamoto S, Ishizaki T, Okawa K, Watanabe S, Arakawa T, Watanabe N, Narumiya S
Journal of cell science (2012) 125Pt 1: 108-20. . **WB**

Extensive remodeling of the presynaptic cytomatrix upon homeostatic adaptation to network activity silencing.
Lazarevic V, Schöne C, Heine M, Gundelfinger ED, Fejtova A
The Journal of neuroscience : the official journal of the Society for Neuroscience (2011) 3128: 10189-200. . **WB**

Selected General References

Liprin-alpha has LAR-independent functions in R7 photoreceptor axon targeting.
Hofmeyer K et al. Proc. Natl. Acad. Sci. U.S.A. (2006) PubMed:16864797

Interaction of the ERC family of RIM-binding proteins with the liprin-alpha family of multidomain proteins.
Ko J et al. J. Biol. Chem. (2003) PubMed:12923177

Interaction between liprin-alpha and GIT1 is required for AMPA receptor targeting.
Ko J et al. J. Neurosci. (2003) PubMed:12629171

The GIT family of proteins forms multimers and associates with the presynaptic cytomatrix protein Piccolo.
Kim S et al. J. Biol. Chem. (2003) PubMed:12473661

Access the online factsheet including applicable protocols at https://sysy.com/product/169102 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.