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**: 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, Maurel-Zaffran C, Sink H, Treisman JE
Proceedings of the National Academy of Sciences of the United States of America (2006) 10331: 11595-600. .

Interaction of the ERC family of RIM-binding proteins with the liprin-alpha family of multidomain proteins.
Ko J, Na M, Kim S, Lee JR, Kim E
The Journal of biological chemistry (2003) 27843: 42377-85. .

Interaction between liprin-alpha and GIT1 is required for AMPA receptor targeting.
Ko J, Kim S, Valtschanoff JG, Shin H, Lee JR, Sheng M, Premont RT, Weinberg RJ, Kim E
The Journal of neuroscience : the official journal of the Society for Neuroscience (2003) 235: 1667-77. .

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 our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera**: With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies**: Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein.
  For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.