SYSY Antibodies

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Paralemmin1 (PALM1)

Cat.No. 559 103; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For **reconstitution** add 50 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 up to 1 : 5000 (AP staining) **IP**: not tested yet **ICC**: 1 : 500 up to 1 : 1000 **IHC**: 1 : 500 up to 1 : 1000 **IHC-P (FFPE)**: 1 : 2000 up to 1 : 10000
Immunogen	Recombinant protein corresponding to the N-terminal half of mouse paralemmin1 (UniProt Id: Q9Z0P4-2)
Reactivity	Reacts with: mouse (Q9Z0P4-2), rat (Q920Q0), human (O75781-2). Other species not tested yet.
Specificity	K.O. validated PubMed: 40053592

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

Background

Paralemmin-1 (PALM1) is an alternatively spliced phosphoprotein of the paralemmin family, defined by a conserved paralemmin motif and a C-terminal prenylation/di-palmitoylation cysteine cluster (CaaX-like anchor) that targets the protein to the cytoplasmic face of membranes.
Paralemmin1 belongs to the Paralemmin family comprising four members (paralemmin1, 2, 3 and palmdelphin), which share a conserved domain structure. Palmdelphin is lacking the C terminal lipid anchor (3).
Functionally, Paralemmin-1 acts as a membrane-shape regulator linked to plasma-membrane dynamics, filopodia/process formation, dendritic spine maturation, and receptor-associated signaling (1, 2, 4). It localizes in discontinuous patches at the plasma membrane and endomembranes, prominently in neuronal perikarya, axons, dendrites, dendritic spines, and also in glial processes. Polarized membrane localization is seen in kidney and adrenal epithelia (1, 3). Paralemmin-1 expression is highest in brain, but also occurs in kidney, adrenal gland, lens fiber cells, retina, and lymphatic endothelial cells (1, 3, 5). Pathologically, increased paralemmin-1 is associated with breast cancer and contributes to tumor lymphangiogenesis (4, 5).

Selected References for 559 103

Paralemmin, a prenyl-palmitoyl-anchored phosphoprotein abundant in neurons and implicated in plasma membrane dynamics and cell process formation.
Kutzleb C, Sanders G, Yamamoto R, Wang X, Lichte B, Petrasch-Parwez E, Kilimann MW
The Journal of cell biology (1998) 1433: 795-813. . **WB, ICC, EM**

Cellular and subcellular localization of paralemmin-1, a protein involved in cell shape control, in the rat brain, adrenal gland and kidney.
Kutzleb C, Petrasch-Parwez E, Kilimann MW
Histochemistry and cell biology (2007) 1271: 13-30. . **WB, IHC, EM; tested species: rat**

Paralemmin-1, a modulator of filopodia induction is required for spine maturation.
Arstikaitis P, Gauthier-Campbell C, Carolina Gutierrez Herrera R, Huang K, Levinson JN, Murphy TH, Kilimann MW, Sala C, Colicos MA, El-Husseini A
Molecular biology of the cell (2008) 195: 2026-38. . **ICC, WB; tested species: mouse,rat**

Paralemmin-1 controls the nanoarchitecture of the neuronal submembrane cytoskeleton.
Macarrón-Palacios V, Hubrich J, do Rego Barros Fernandes Lima MA, Metzendorf NG, Kneilmann S, Trapp M, Acuna C, Patrizi A, D'Este E, Kilimann MW
Science advances (2025) 1110: eadt3724. . **ICC; KO verified; tested species: mouse**

Selected General References

Paralemmin, a prenyl-palmitoyl-anchored phosphoprotein abundant in neurons and implicated in plasma membrane dynamics and cell process formation.
Kutzleb C et al. J Cell Biol (1998) PubMed:9813098

Paralemmin-1 is expressed in lymphatic endothelial cells and modulates cell migration, cell maturation and tumor lymphangiogenesis.
Albrecht I et al. Angiogenesis (2013) PubMed:23709172

Paralemmin-1 is over-expressed in estrogen-receptor positive breast cancers.
Turk CM et al. Cancer Cell Int (2012) PubMed:22574838

Paralemmin-1, a modulator of filopodia induction is required for spine maturation.
Arstikaitis P et al. Mol Biol Cell (2008) PubMed:18287537

Access the online factsheet including applicable protocols at https://sysy.com/product/559103 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.