SYSY Antibodies

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PSD95 PDZ domain

Cat.No. 124 014; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For **reconstitution** add 100 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 up to 1 : 10000 (AP staining) **IP**: not tested yet **ICC**: 1 : 1000 up to 1 : 3000 (see remarks) **IHC**: not tested yet **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to PDZ-domain of mouse PSD95 (UniProt Id: Q62108)
Reactivity	Reacts with: rat (P31016), mouse (Q62108). Other species not tested yet.
Specificity	Specific for PSD 95 with weak cross-reactivity to SAP 102
Matching control	124-01P
Remarks	**ICC**: Produces more background staining than the monoclonal antibody cat. no. 124 011.

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

Background

PSD95 (**p**ost**s**ynaptic **d**ensity protein **95** kDa, also called **SAP 90**: **s**ynapse **a**ssociated **p**rotein of **90** kDa and **DLG 4**) is a component of postsynaptic densities in central synapses. It contains three PDZ domains. The first and second PDZ domain localizes NMDA receptors and K^+ channels to synapses, the third binds to neuroligins which are neuronal cell adhesion molecules that interact with β-neurexins and form intercellular junctions. Thus different PDZ domains of PSD95 might be specialized for distinct functions. Read more: PSD95-antibody

Selected References for 124 014

Tau is required for the function of extrasynaptic NMDA receptors.
Pallas-Bazarra N, Draffin J, Cuadros R, Antonio Esteban J, Avila J
Scientific reports (2019) 91: 9116. . **WB, IHC; tested species: mouse**

Human astrocytes and microglia show augmented ingestion of synapses in Alzheimer's disease via MFG-E8.
Tzioras M, Daniels MJD, Davies C, Baxter P, King D, McKay S, Varga B, Popovic K, Hernandez M, Stevenson AJ, Barrington J, et al.
Cell reports. Medicine (2023) 49: 101175. . **WB, IHC-P; tested species: human**

Variability in the Munc13-1 content of excitatory release sites.
Karlocai MR, Heredi J, Benedek T, Holderith N, Lorincz A, Nusser Z
eLife (2021) 10: . . **IHC, EM; tested species: mouse**

The X-Linked Intellectual Disability Gene Zdhhc9 Is Essential for Dendrite Outgrowth and Inhibitory Synapse Formation.
Shimell JJ, Shah BS, Cain SM, Thouta S, Kuhlmann N, Tatarnikov I, Jovellar DB, Brigidi GS, Kass J, Milnerwood AJ, Snutch TP, et al.
Cell reports (2019) 298: 2422-2437.e8. . **WB, ICC; tested species: rat**

Divergent actions of physiological and pathological amyloid-β on synapses in live human brain slice cultures.
McGeachan RI, Meftah S, Taylor LW, Catterson JH, Negro D, Bonthron C, Holt K, Tulloch J, Rose JL, Gobbo F, Chang YY, et al.
Nature communications (2025) 161: 3753. . **IHC, ICC; tested species: human**

Estradiol reverses excitatory synapse loss in a cellular model of neuropsychiatric disorders.
Erli F, Palmos AB, Raval P, Mukherjee J, Sellers KJ, Gatford NJF, Moss SJ, Brandon NJ, Penzes P, Srivastava DP
Translational psychiatry (2020) 101: 16. . **WB, ICC; tested species: rat**

Targeting hormone treatment for the brain in menopause.
Itoh N, Itoh Y, Patil R, Till C, Smith M, Schwartz J, Davis B, Oberman E, Romeroso BD, Voskuhl RR
Scientific reports (2026) 161: . . **IHC; tested species: mouse**

Meningeal lymphatics-microglia axis regulates synaptic physiology.
Kim K, Abramishvili D, Du S, Papadopoulos Z, Cao J, Herz J, Smirnov I, Thomas JL, Colonna M, Kipnis J
Cell (2025) 18810: 2705-2719.e23. . **WB; tested species: mouse**

Calpain and caspase regulate Aβ peptide production via cleavage of KINDLIN2 encoded by the AD-associated gene FERMT2.
Najdek C, Walle P, Flaig A, Ayral AM, Demiautte F, Coulon A, Buiche V, , Lambert E, Amouyel P, Gelle C, et al.
Neurobiology of aging (2025) 151: 117-125. . **WB; tested species: human,mouse**

Peptide Family Promotes Brain Cell Rejuvenation and Improved Cognition through Peripheral Delivery.
Anton-Fernandez A, Domene-Serrano I, Cuadros R, Peinado-Cahuchola R, Sanchez-Pece M, Hernandez F, Avila J
ACS omega (2025) 1013: 13236-13250. . **ICC; tested species: mouse**

p-tau Ser356 is associated with Alzheimer's disease pathology and is lowered in brain slice cultures using the NUAK inhibitor WZ4003.
Taylor LW, Simzer EM, Pimblett C, Lacey-Solymar OTT, McGeachan RI, Meftah S, Rose JL, Spires-Jones MP, Holt K, Catterson JH, Koch H, et al.
Acta neuropathologica (2024) 1471: 7. . **IHC; tested species: human**

Access the online factsheet including applicable protocols at https://sysy.com/product/124014 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.