

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 ₂ O, then aliquot and store at -20°C until use. 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

Access the online factsheet including applicable protocols at <https://sysy.com/product/124014> or scan the QR-code.



Background

PSD95 (postsynaptic density protein 95 kDa, also called **SAP 90**: synapse associated protein 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 PSD 95 might be specialized for distinct functions. Read more: PSD95 single domain 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**

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**

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**

Synapse loss in the prefrontal cortex is associated with cognitive decline in amyotrophic lateral sclerosis.
Henstridge CM, Sideris DI, Carroll E, Rotariu S, Salomonsson S, Tzioras M, McKenzie CA, Smith C, von Arnim CAF, Ludolph AC, Lulé D, et al.
Acta neuropathologica (2018) 1352: 213-226. . **IHC-P; tested species: human**

Neuronal Autophagy Regulates Presynaptic Neurotransmission by Controlling the Axonal Endoplasmic Reticulum.
Kuijpers M, Kochlamazashvili G, Stumpf A, Puchkov D, Swaminathan A, Lucht MT, Krause E, Maritzen T, Schmitz D, Hauke V
Neuron (2021) 1092: 299-313.e9. . **WB; tested species: mouse**

A High-Resolution Method for Quantitative Molecular Analysis of Functionally Characterized Individual Synapses.
Holderith N, Heredi J, Kis V, Nusser Z
Cell reports (2020) 324: 107968. . **IHC; tested species: rat**

Changes in synaptic proteins precede neurodegeneration markers in preclinical Alzheimer's disease cerebrospinal fluid.
Lleó A, Núñez-Llaves R, Alcolea D, Chiva C, Balateu-Pañós D, Colom-Cadena M, Gomez-Giro G, Muñoz L, Querol-Vilaseca M, Pegueroles J, Rami L, et al.
Molecular & cellular proteomics : MCP (2019) . . **WB; tested species: human**

Opposing Roles of apolipoprotein E in aging and neurodegeneration.
Hudry E, Klickstein J, Cannavo C, Jackson R, Muzikansky A, Gandhi S, Urlick D, Sargent T, Wroblewski L, Roe AD, Hou SS, et al.
Life science alliance (2019) 21: . . **IHC; tested species: mouse**

Knockout of Amyloid β Protein Precursor (APP) Expression Alters Synaptogenesis, Neurite Branching and Axonal Morphology of Hippocampal Neurons.
Southam KA, Stennard F, Pavez C, Small DH
Neurochemical research (2018) . . **ICC; tested species: mouse**

Piperlongumine decreases cognitive impairment and improves hippocampal function in aged mice.
Go J, Park TS, Han GH, Park HY, Ryu YK, Kim YH, Hwang JH, Choi DH, Noh JR, Hwang DY, Kim S, et al.
International journal of molecular medicine (2018) 424: 1875-1884. . **WB; tested species: mouse**

MicroRNA-mediated disruption of dendritogenesis during a critical period of development influences cognitive capacity later in life.
Lin Q, Ponnusamy R, Widagdo J, Choi JA, Ge W, Probst C, Buckley T, Lou M, Bredy TW, Fanselow MS, Ye K, et al.
Proceedings of the National Academy of Sciences of the United States of America (2017) 11434: 9188-9193. . **IHC; tested species: mouse**

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 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.