SYSY Antibodies

Rudolf-Wissell-Str. 28a
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: www.sysy.com

PSD95 sdAb

Cat.No. N3702-AF647-L; Single Domain camelid antibody, 200 µl FluoTag-X2

Data Sheet

Reconstitution/ Storage	200 µl purified antibody, lyophilized from PBS, fluorescence-labeled with Alexa 647. Albumin was added for stabilization. For **reconstitution** add 200 µl H_2O. Either add 1:1 (v/v) glycerol, then aliquot and store at -20°C until use, or store aliquots at -80°C without additives. Reconstitute immediately upon receipt! Avoid bright light when working with the antibody to minimize photo bleeching of the fluorescent dye. For detailed information, see back of the data sheet.
Storage	–80°C for up to 12 month
Applications	**WB**: N/A **IP**: not tested yet **ICC**: 1 : 500 **IHC**: 1 : 200 up to 1 : 500 **IHC-P**: 1 : 200
Label	Alexa 647, two fluorophores coupled to one FluoTag
Clone	1B2
Subtype	single domain
Immunogen	Recombinant protein corresponding to AA 68 to 251 from mouse PSD95 (UniProt Id: Q62108)
Reactivity	Reacts with: mouse (Q62108), rat (P31016), human (P78352). Other species not tested yet.
Matching control	124-01P

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 PSD 95 might be specialized for distinct functions.

Unlabeled variants and several modifications of sdAbs like biotin, fluorophore or DBCO conjugation are available.

In **FluoTag®-X2** two fluorophore molecules are site-specifically coupled to each FluoTag molecule. Therefore, the reagent simultaneously targets two fluorophores to the protein of interest, which ensures up to two-fold („2X“)-brighter signals. Owing to the small size of the FluoTags, the distance between the target epitope and each fluorophore is ~ 3 nm.
In comparison to detection systems using conventional antibodies, FluoTag-X can thus improve the localization accuracy by 10-15 nm. Both features - superior brightness and precise fluorophore placement - render the FluoTag-X products excellent tools for all microscopy techniques.

Selected References for N3702-AF647-L

Altered expression of Presenilin2 impacts endolysosomal homeostasis and synapse function in Alzheimer's disease-relevant brain circuits.
Perdok A, Van Acker ZP, Vrancx C, Sannerud R, Vorsters I, Verrengia A, Callaerts-Végh Z, Creemers E, Gutiérrez Fernández S, D'hauw B, Serneels L, et al.
Nature communications (2024) 151: 10412. . **ICC, IHC; tested species: mouse**

Synaptic signatures and disease vulnerabilities of layer 5 pyramidal neurons.
Marcassa G, Dascenco D, Lorente-Echeverría B, Daaboul D, Vandensteen J, Leysen E, Baltussen L, Howden AJM, de Wit J
Nature communications (2025) 161: 228. . **IHC; tested species: mouse**

The Shab family potassium channels are highly enriched at the presynaptic terminals of human neurons.
Benner O, Karr CH, Quintero-Gonzalez A, Tamkun MM, Chanda S
The Journal of biological chemistry (2025) 3013: 108235. . **ICC; tested species: human**

The human milk component myo-inositol promotes neuronal connectivity.
Paquette AF, Carbone BE, Vogel S, Israel E, Maria SD, Patil NP, Sah S, Chowdhury D, Kondratiuk I, Labhart B, Morrow AL, et al.
Proceedings of the National Academy of Sciences of the United States of America (2023) 12030: e2221413120. . **ICC; tested species: rat**

Selected General References

SAP family proteins.
Fujita A et al. Biochem. Biophys. Res. Commun. (2000) PubMed:10694467

Molecular organization of excitatory chemical synapses in the mammalian brain.
Gundelfinger ED et al. Naturwissenschaften (2000) PubMed:11198190

Binding of neuroligins to PSD-95.
Irie M et al. Science (1997) PubMed:9278515

Mechanisms determining the time course of secretion in neuroendocrine cells.
Chow RH et al. Neuron (1996) PubMed:8789951

Access the online factsheet including applicable protocols at https://sysy.com/product/N3702-AF647-L 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.