

Synaptojanin1 splice variant

Cat.No. 145 103; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. For reconstitution add 50 µl H ₂ O 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 : 200 up to 1 : 2000 (AP staining) (see remarks) IP: not tested yet ICC: not tested yet IHC: 1 : 1000 up to 1 : 5000 (see remarks) IHC-P: not tested yet
Immunogen	Synthetic peptide corresponding to AA 1140 to 1155 from rat Synaptojanin1 (UniProt Id: Q62910-1)
Reactivity	Reacts with: rat (Q62910-1, Q62910-2, Q62910-3), mouse (Q8CHC4), hamster. Other species not tested yet.
Specificity	Recognizes isoforms 1, 2, 3 of synaptojanin 1.
Matching control	145-1P
Remarks	WB: To avoid protein aggregation, do not heat samples for SDS-PAGE. Non-boiled samples give stronger signals. IHC: For optimal results in retina tissue, follow the retina protocol. The antibody has been published in other tissues by customers (see IHC references).

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

Background

Synaptojanin 1 is a phosphoinositide phosphatase which exists in two tissue specific isoforms (170 and 145 kDa). The 145 kDa isoform is predominantly expressed in the nervous system. It has a three domain structure with an N-terminal part homologous to the yeast Sac 1p protein, a central inositol 5-phosphatase domain and a C-terminal SH3 binding domain. Synaptojanin is involved in clathrin mediated synaptic vesicle recycling and binds to endophilin and amphiphysin.

Six isoforms are described so far and two splice variants of the 145 kDa isoform. The predominant one contains a 16 AA insert at position 1140-1155.

Selected References for 145 103

Synaptic AP2 CCV life cycle regulation by the Eps15, ITSN1, Sgip1/AP2, synaptojanin1 interactome.

Mishra R, Sengül GF, Candiello E, Schu P

Scientific reports (2021) 111: 8007. . **WB; tested species: mouse**

Neuronal BIN1 Regulates Presynaptic Neurotransmitter Release and Memory Consolidation.

De Rossi P, Nomura T, Andrew RJ, Masse NY, Sampathkumar V, Musial TF, Sudwarts A, Recupero AJ, Le Metayer T, Hansen MT, Shim HN, et al.

Cell reports (2020) 3010: 3520-3535.e7. . **IHC; tested species: mouse**

Selected General References

Regulation of synaptojanin 1 by cyclin-dependent kinase 5 at synapses.

Lee SY et al. Proc. Natl. Acad. Sci. U.S.A. (2004) PubMed:14704270

Endophilin is required for synaptic vesicle endocytosis by localizing synaptojanin.

Schuske KR et al. Neuron (2003) PubMed:14622579

Synaptojanin is recruited by endophilin to promote synaptic vesicle uncoating.

Verstreken P et al. Neuron (2003) PubMed:14622578

Endophilin and synaptojanin hook up to promote synaptic vesicle endocytosis.

Song W et al. Neuron (2003) PubMed:14622570

Synaptojanin 1 contributes to maintaining the stability of GABAergic transmission in primary cultures of cortical neurons.

Luthi A et al. J. Neurosci. (2001) PubMed:11717343

Mutations in synaptojanin disrupt synaptic vesicle recycling.

Harris TW et al. J. Cell Biol. (2000) PubMed:10931870

Direct interaction of the 170 kDa isoform of synaptojanin 1 with clathrin and with the clathrin adaptor AP-2.

Haffner C et al. Curr. Biol. (2000) PubMed:10801423

Synaptojanin is the major constitutively active phosphatidylinositol-3,4,5-trisphosphate 5-phosphatase in rodent brain.

Woscholski R et al. J. Biol. Chem. (1997) PubMed:9092489

Identification of the major synaptojanin-binding proteins in brain.

de Heuvel E et al. J. Biol. Chem. (1997) PubMed:9079704

Tissue-specific alternative splicing generates two synaptojanin isoforms with differential membrane binding properties.

Ramjaun AR et al. J. Biol. Chem. (1996) PubMed:8798761

Access the online factsheet including applicable protocols at <https://sysy.com/product/145103> 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 at 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.