SYSY Antibodies

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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_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 : 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 (FFPE)**: 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 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.