SYSY Antibodies

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Synapsin3

Cat.No. 106 303; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was added for stabilization. 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 : 1000 (AP staining) **IP**: not tested yet **ICC**: 1 : 500 up to 1 : 1000 **IHC**: 1 : 500 up to 1 : 1000 **IHC-P (FFPE)**: 1 : 1000
Immunogen	Synthetic peptide corresponding to AA 417 to 434 from mouse Synapsin3 (UniProt Id: Q8JZP2-1)
Reactivity	Reacts with: rat (O70441), mouse (Q8JZP2). Other species not tested yet.
Specificity	K.O. validated PubMed: 26400944

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

Background

Synapsins are neuron-specific phosphoproteins that are exclusively associated with small synaptic vesicles, with little or no expression in other tissues including neuroendocrine cells. In mammals, three distinct synapsin genes (synapsin 1, 2 and 3) encode more than eight neuronal isoforms.
Synapsin 1 is one of the most specific markers of synapses throughout the central and peripheral nervous system. In addition to synaptic nerve terminals, the protein is also present in certain sensory nerve endings. It is expressed in two splice variants (synapsin 1a and synapsin 1b). Synapsin 1 interacts with vesicle membranes as well as with actin and spectrin.
Synapsin 2 is expressed in the nervous system and also two splice variants were described so far, while **synapsin 3** shows a more restricted expression pattern and is mainly found in the hippocampus.
Synapsins are major phosphoproteins and are substrates for several protein kinases such as PKA, CaMK I and CaMK II. Synapsin 1 is widely used as reference substrate for calmodulin-dependent protein kinases.

Selected References for 106 303

Phosphorylation by PKA and Cdk5 Mediates the Early Effects of Synapsin III in Neuronal Morphological Maturation.
Piccini A, Perlini LE, Cancedda L, Benfenati F, Giovedì S
The Journal of neuroscience : the official journal of the Society for Neuroscience (2015) 3538: 13148-59. . **ICC, WB; KO verified**

Lowering Synaptogyrin-3 expression rescues Tau-induced memory defects and synaptic loss in the presence of microglial activation.
Largo-Barrientos P, Apóstolo N, Creemers E, Callaerts-Vegh Z, Swerts J, Davies C, McInnes J, Wierda K, De Strooper B, Spires-Jones T, de Wit J, et al.
Neuron (2021) : . . **WB, IHC; tested species: mouse**

Capicua Refines Mossy Fiber-CA3 Axon Targeting in the Late Postnatal Hippocampus.
van Bruggen R, Manzanet Freyre K, Wang M, Tan Q
FASEB journal : official publication of the Federation of American Societies for Experimental Biology (2025) 3918: e71067. . **WB, IHC; tested species: mouse**

Loss of schizophrenia risk gene XPO7 disrupts neuronal excitability and network regularity via altered Na+ channel dynamics in human neurons.
Cui L, Kurganov E, Hawes D, Hornauer P, Lin R, Wang Y, Hierlemann A, Sheng M, Nehme R, Pan JQ
Molecular psychiatry (2026) : . . **WB; tested species: human**

Early α-synuclein/synapsin III co-accumulation, nigrostriatal dopaminergic synaptopathy and denervation in the MPTPp mouse model of Parkinson's Disease.
Serra M, Faustini G, Brembati V, Casu MA, Pizzi M, Morelli M, Pinna A, Bellucci A
Experimental neurology (2025) 383: 115040. . **IHC; tested species: mouse**

On-Site Formation of Functional Dopaminergic Presynaptic Terminals on Neuroligin-2-Modified Gold-Coated Microspheres.
Cho W, Jung M, Yoon SH, Jeon J, Oh MA, Kim JY, Park M, Kang CM, Chung TD
ACS applied materials & interfaces (2024) 163: 3082-3092. . **ICC; tested species: rat**

Synapse type-specific proteomic dissection identifies IgSF8 as a hippocampal CA3 microcircuit organizer.
Apóstolo N, Smukowski SN, Vanderlinden J, Condomitti G, Rybakin V, Ten Bos J, Trobiani L, Portegies S, Vennekens KM, Gounko NV, Comoletti D, et al.
Nature communications (2020) 111: 5171. . **IHC; tested species: mouse**

Loss of Protein Arginine Methyltransferase 8 Alters Synapse Composition and Function, Resulting in Behavioral Defects.
Penney J, Seo J, Kritskiy O, Elmsaouri S, Gao F, Pao PC, Su SC, Tsai LH
The Journal of neuroscience : the official journal of the Society for Neuroscience (2017) 3736: 8655-8666. . **ICC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/106303 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.