SYSY Antibodies

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Synapsin1/2

Cat.No. 106 006; Polyclonal chicken antibody, 200 µl antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antibody, lyophilized. For **reconstitution** add 200 µl H_2O, then aliquot and store at -20°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 **IHC**: 1 : 500 **IHC-P**: 1 : 500
Immunogen	Synthetic peptide corresponding to AA 2 to 28 from rat Synapsin1 (UniProt Id: P09951)
Reactivity	Reacts with: human (P17600, Q92777), rat (P09951, Q63537), mouse (O88935, Q64332). Other species not tested yet.
Specificity	Specific for synapsins 1a/b and 2a/b.
Matching control	106-0P

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 hypocampus. 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 106 006

Changes in the Synaptic Proteome in Tauopathy and Rescue of Tau-Induced Synapse Loss by C1q Antibodies.
Dejanovic B, Huntley MA, De Mazière A, Meilandt WJ, Wu T, Srinivasan K, Jiang Z, Gandham V, Friedman BA, Ngu H, Foreman O, et al.
Neuron (2018) : . . **ICC, IHC; tested species: mouse**

Hippocampal Memory Recovery After Acute Stress: A Behavioral, Morphological and Molecular Study.
Aguayo FI, Tejos-Bravo M, Díaz-Véliz G, Pacheco A, García-Rojo G, Corrales W, Olave FA, Aliaga E, Ulloa JL, Avalos AM, Román-Albasini L, et al.
Frontiers in molecular neuroscience (2018) 11: 283. . **WB; tested species: rat**

Microglial CLEC7A restrains amyloid beta plaque pathology in a mouse model of Alzheimer's disease.
Mangalmurti A, Zengeler KE, Hollis A, Golden E, Riddlemoser G, Lukens JR
Alzheimer's & dementia : the journal of the Alzheimer's Association (2025) 2111: e70943. . **WB; tested species: mouse**

GM1 Oligosaccharide Ameliorates Rett Syndrome Phenotypes In Vitro and In Vivo via Trk Receptor Activation.
Fazzari M, Lunghi G, Carsana EV, Valsecchi M, Spiombi E, Breccia M, Casati SR, Pedretti S, Mitro N, Mauri L, Ciampa MG, et al.
International journal of molecular sciences (2024) 2521: . . **ICC; tested species: mouse**

Mecp2 knock-out astrocytes affect synaptogenesis by interleukin 6 dependent mechanisms.
Albizzati E, Breccia M, Florio E, Cabasino C, Postogna FM, Grassi R, Boda E, Battaglia C, De Palma C, De Quattro C, Pozzi D, et al.
iScience (2024) 273: 109296. . **ICC; tested species: mouse**

Neural precursor cells rescue symptoms of Rett syndrome by activation of the Interferon γ pathway.
Frasca A, Miramondi F, Butti E, Indrigo M, Balbontin Arenas M, Postogna FM, Piffer A, Bedogni F, Pizzamiglio L, Cambria C, Borello U, et al.
EMBO molecular medicine (2024) 1612: 3218-3246. . **ICC; tested species: mouse**

Development and Optimization of a Multilayer Rat Purkinje Neuron Culture.
Uggerud IM, Kråkenes T, Hirai H, Vedeler CA, Schubert M
Cerebellum (London, England) (2023) : . . **ICC; tested species: rat**

Noncanonical Activity of Tissue Inhibitor of Metalloproteinases 2 (TIMP2) Improves Cognition and Synapse Density in Aging.
Britton R, Wasley T, Harish R, Holz C, Hall J, Yee DC, Melton Witt J, Booth EA, Braithwaite S, Czirr E, Kerrisk Campbell M, et al.
eNeuro (2023) 106: . . **IHC; tested species: mouse**

Axonal Transport of Lysosomes Is Unaffected in Glucocerebrosidase-Inhibited iPSC-Derived Forebrain Neurons.
Keefe AJ, Gabrych DR, Zhu Y, Vocadlo DJ, Silverman MA
eNeuro (2023) 1010: . . **ICC; tested species: human**

Access the online factsheet including applicable protocols at https://sysy.com/product/106006 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.