SYSY Antibodies

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# Synaptophysin1 (p38-1)

**Cat.No. 101 006; Polyclonal chicken antibody, 200 µl antibody (lyophilized)**

## Data Sheet

| | |
|---|---|
| Reconstitution/ Storage | 200 µl antibody, lyophilized. Albumin was added for stabilization. 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)<br>**IP**: not tested yet<br>**ICC**: 1 : 500<br>**IHC**: 1 : 500<br>**IHC-P**: 1 : 500 |
| Immunogen | Synthetic peptide corresponding to residues near the carboxy terminus of human Synaptophysin (UniProt Id: P08247) |
| Reactivity | Reacts with: human (P08247), rat (P07825), mouse (Q62277).<br>Other species not tested yet. |
| Matching control | 101-0P |

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

## Background

**Synaptophysin1**, also referred to as **p38-1**, is a membrane glycoprotein of synaptic vesicles that is ubiquitously expressed in all neurons and in many endocrine cells. It is currently the most widely used marker for nerve terminals and probably the best marker for the pathologist in differentiating neuroendocrine tumors.
Synaptophysin1 has four transmembrane domains with both N- and C-terminus facing the cytoplasm. It binds to synaptobrevin1 and synaptobrevin2 in detergent extracts but its function has not been elucidated completely. It forms a complex with dynamin at high $Ca^{2+}$ concentration suggesting an involvement in synaptic vesicle endocytosis. As typical for synaptic vesicle proteins, synaptophysin1 represents a small protein family with two additonal members, synaptoporin (synaptophysin2) and panthophysin. Like synaptophysin1, synaptoporin is widely expressed in neurons and colocalizes with synaptophysin1 on synaptic vesicles whereas panthophysin is expressed in all tissues.

## Selected References for 101 006

Identification of Neuronal Pentraxins as Synaptic Binding Partners of C1q and the Involvement of NP1 in Synaptic Pruning in Adult Mice.
Kovács RÁ, Vadászi H, Bulyáki É, Török G, Tóth V, Mátyás D, Kun J, Hunyadi-Gulyás É, Fedor FZ, Csincsi Á, Medzihradszky K, et al.
Frontiers in immunology (2020) 11: 599771. . **ICC, IHC; tested species: mouse**

G6PD deficiency triggers dopamine loss and the initiation of Parkinson's disease pathogenesis.
Stykel MG, Siripala SV, Soubeyrand E, Coackley CL, Lu P, Camargo S, Thevasenan S, Figueroa GB, So RWL, Stuart E, Panchal R, et al.
Cell reports (2025) 441: 115178. . **WB, ICC; tested species: human,mouse,rat**

NLRX1 limits inflammatory neurodegeneration in the anterior visual pathway.
Gill AJ, Smith MD, Galleguillos D, Garton T, Mace JW, Gadani SP, Kumar S, Pokharel A, Solem K, Potluri S, Hussein O, et al.
Journal of neuroinflammation (2025) 221: 21. . **IHC; tested species: mouse**

Myeloid lineage C3 induces reactive gliosis and neuronal stress during CNS inflammation.
Garton T, Smith MD, Kesharwani A, Gharagozloo M, Oh S, Na CH, Absinta M, Reich DS, Zack DJ, Calabresi PA
Nature communications (2025) 161: 3481. . **IHC; tested species: mouse**

An In Vitro Assay to Measure Astrocyte-Dependent Synaptic Phagocytosis in Health and Major Depressive Disorder.
Vesga-Jimenez DJ, Vivi E, Di Benedetto B
Methods in molecular biology (Clifton, N.J.) (2025) 2896: 191-201. . **ICC; tested species: rat**

Cortical Organotypic Brain Slice Cultures to Examine Sex- and Age-Dependent Astrocyte-Mediated Synaptic Phagocytosis.
Nagumanova A, Seeholzer LR, Di Benedetto B
Methods in molecular biology (Clifton, N.J.) (2025) 2896: 203-214. . **IHC; tested species: rat**

Calpain and caspase regulate Aβ peptide production via cleavage of KINDLIN2 encoded by the AD-associated gene FERMT2.
Najdek C, Walle P, Flaig A, Ayral AM, Demiautte F, Coulon A, Buiche V, , Lambert E, Amouyel P, Gelle C, et al.
Neurobiology of aging (2025) 151: 117-125. . **WB; tested species: human,mouse**

Tau association with synaptic mitochondria coincides with energetic dysfunction and excitatory synapse loss in the P301S tauopathy mouse model.
Daniel Estrella L, Trease AJ, Sheldon L, Roland NJ, Fox HS, Stauch KL
Neurobiology of aging (2024) 147: 163-175. . **IHC; tested species: mouse**

Methods for culturing adult CNS neurons reveal a CNS conditioning effect.
van Niekerk EA, Kawaguchi R, Marques de Freria C, Groeniger K, Marchetto MC, Dupraz S, Bradke F, Geschwind DH, Gage FH, Tuszynski MH
Cell reports methods (2022) 27: 100255. . **ICC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/101006 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.