SYSY Antibodies

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Synaptotagmin1 (p65) luminal domain

Cat.No. 105 103; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were 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**: yes **ICC**: 1 : 100 up to 1 : 500 (see remarks) **IHC**: 1 : 500 (rat only) **IHC-P (FFPE)**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 1 to 8 from mouse Synaptotagmin1 (UniProt Id: P46096)
Reactivity	Reacts with: rat (P21707), mouse (P46096). Other species not tested yet. For unknown reasons antibodies raised against the luminal N-terminus of Synaptotagmin 1 show a strong preference for the rat protein.
Specificity	K.O. validated PubMed: 31501440
Matching control	105-10P
Remarks	**ICC**: This antibody can also be used for labeling of recycling synaptic vesicles in living neurons.

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

Background

Synaptotagmin1, also known as **p65**, is an integral membrane glycoprotein of neuronal synaptic vesicles and secretory granules of neuroendocrine cells that is widely (but not ubiquitously) expressed in the central and peripheral nervous system. It has a variable N-terminal domain that is exposed to the lumen of the vesicle and a conserved cytoplasmic tail that contains two Ca^{2+}-binding C2-domains. Ca^{2+}-binding to synaptotagmin triggers exocytosis of synaptic vesicles, thus linking Ca^{2+}-influx during depolarization to neurotransmitter release.
Lumenal antibodies were used in living neurons to label synaptic vesicles from the outside via endocytotic uptake.

For more information on protein expression pattern, please refer to the overview image in our SYSY Antibodies ATLAS.

Selected References for 105 103

Expression and secretion of synaptic proteins during stem cell differentiation to cortical neurons.
Nazir FH, Becker B, Brinkmalm A, Höglund K, Sandelius Å, Bergström P, Satir TM, Öhrfelt A, Blennow K, Agholme L, Zetterberg H, et al.
Neurochemistry international (2018) : . . **WB, ICC; tested species: human**

Synaptophysin sustains presynaptic performance by preserving vesicular synaptobrevin-II levels.
Kokotos AC, Harper CB, Marland JRK, Smillie KJ, Cousin MA, Gordon SL
Journal of neurochemistry (2019) : . . **WB, ICC; tested species: mouse**

Control of exocytosis by synaptotagmins and otoferlin in auditory hair cells.
Beurg M, Michalski N, Safieddine S, Bouleau Y, Schneggenburger R, Chapman ER, Petit C, Dulon D
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 3040: 13281-90. . **IHC; tested species: rat**

The epitranscriptomic m6A RNA modification modulates the synapse in ageing and in a mouse model of synucleinopathy.
Chopra A, Xylaki M, Yin F, Castro-Hernández R, Merghani M, Grande V, Mollenhauer B, Fischer A, Outeiro TF
NPJ Parkinson's disease (2026) 121: . . **ICC; tested species: mouse**

Transcranial photobiomodulation promotes traumatic brain injury recovery via modulating glial cell polarization and neuroinflammation: a study of 1064 nm light-emitting diodes.
Chen G, Xu Z, Ma H, Qin Q, Li X, Yang A, Chen Y, Tan Y, Qiu Y, Wang Y, Ruan H, et al.
Journal of translational medicine (2025) 231: 1245. . **WB; tested species: mouse**

Mouse-derived Synaptosomes Trypsin Cleavage Assay to Characterize Synaptic Protein Sub-localization.
Shergill JK, Tehran DA
Bio-protocol (2025) 152: e5164. . **WB; tested species: mouse**

Monitoring of activity-driven trafficking of endogenous synaptic proteins through proximity labeling.
Pascual-Caro C, de Juan-Sanz J
PLoS biology (2024) 2210: e3002860. . **WB; tested species: rat**

Synaptotagmin-1-dependent phasic axonal dopamine release is dispensable for basic motor behaviors in mice.
Delignat-Lavaud B, Kano J, Ducrot C, Massé I, Mukherjee S, Giguère N, Moquin L, Lévesque C, Burke S, Denis R, Bourque MJ, et al.
Nature communications (2023) 141: 4120. . **ICC; KO verified; tested species: mouse**

Phosphatidylinositol 4-kinase IIα is a glycogen synthase kinase 3-regulated interaction hub for activity-dependent bulk endocytosis.
Blumrich EM, Nicholson-Fish JC, Pronot M, Davenport EC, Kurian D, Cole A, Smillie KJ, Cousin MA
Cell reports (2023) 426: 112633. . **ICC; tested species: rat**

Access the online factsheet including applicable protocols at https://sysy.com/product/105103 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.