

Synaptotagmin1 (p65) luminal domain

Cat.No. 105 102; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/Storage	200 µl antiserum, lyophilized. For reconstitution add 200 µl H ₂ O, 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: yes ICC: 1 : 500 up to 1 : 1000 (see remarks) IHC: 1 : 500 IHC-P: 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.
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 Ca²⁺-binding C2-domains. Ca²⁺-binding to synaptotagmin triggers exocytosis of synaptic vesicles, thus linking Ca²⁺-influx during depolarization to neurotransmitter release.

Luminal 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 105 102

- Composition of isolated synaptic boutons reveals the amounts of vesicle trafficking proteins. Wilhelm BG, Mandad S, Truckenbrodt S, Kröhnert K, Schäfer C, Rammner B, Koo SJ, Claßen GA, Krauss M, Haucke V, Urlaub H, et al. *Science (New York, N.Y.)* (2014) 3446187: 1023-8. . **ICC, IHC; tested species: mouse**
- Synaptogyrin-3 Mediates Presynaptic Dysfunction Induced by Tau. McInnes J, Wierda K, Snellinx A, Bounti L, Wang YC, Stancu IC, Apóstolo N, Gevaert K, Dewachter I, Spires-Jones TL, De Strooper B, et al. *Neuron* (2018) 974: 823-835.e8. . **WB; tested species: mouse**
- A novel non-canonical Notch signaling regulates expression of synaptic vesicle proteins in excitatory neurons. Hayashi Y, Nishimune H, Hozumi K, Saga Y, Harada A, Yuzaki M, Iwatsubo T, Kopan R, Tomita T *Scientific reports* (2016) 6: 23969. . **UPTAKE; tested species: mouse**
- Correlation between evoked neurotransmitter release and adaptive functions in SYT1-associated neurodevelopmental disorder. Park PY, Bleakley LE, Saraya N, Al-Jawahiri R, Eck J, Aloï MA, Melland H, Baker K, Gordon SL *EBioMedicine* (2024) 109: 105416. . **ICC; tested species: mouse**
- SV2B defines a subpopulation of synaptic vesicles. Paulussen I, Beckert H, Musial TF, Gschossmann LJ, Wolf J, Schmitt M, Clasadonte J, Mairet-Coello G, Wolff C, Schoch S, Dietrich D, et al. *Journal of molecular cell biology* (2023) : . . **WB; tested species: mouse**
- Clathrin-independent endocytic retrieval of SV proteins mediated by the clathrin adaptor AP-2 at mammalian central synapses. López-Hernández T, Takenaka KI, Mori Y, Kongpracha P, Nagamori S, Haucke V, Takamori S *eLife* (2022) 11: . . **ICC; tested species: mouse**
- miR-128 as a Regulator of Synaptic Properties in 5xFAD Mice Hippocampal Neurons. Shvarts-Serebro I, Sheinin A, Gottfried I, Adler L, Schottlender N, Ashery U, Barak B *Journal of molecular neuroscience : MN* (2021) : . . **WB; tested species: mouse**
- Rho-kinase inhibition by fasudil modulates pre-synaptic vesicle dynamics. Saal KA, Warth Pérez Arias C, Roser AE, Christoph Koch J, Bähr M, Rizzoli SO, Lingor P *Journal of neurochemistry* (2020) : . . **WB; tested species: rat**
- Auxiliary $\alpha 2\delta 1$ and $\alpha 2\delta 3$ Subunits of Calcium Channels Drive Excitatory and Inhibitory Neuronal Network Development. Bikbaev A, Ciuraszkiewicz-Wojciech A, Heck J, Klatt O, Freund R, Mitlöchner J, Enrile Lacalle S, Sun M, Repetto D, Frischknecht R, Ablinger C, et al. *The Journal of neuroscience : the official journal of the Society for Neuroscience* (2020) 4025: 4824-4841. . **WB; tested species: mouse**

Access the online factsheet including applicable protocols at <https://sysy.com/product/105102> 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.