SYSY Antibodies

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Synaptotagmin1 (p65) luminal domain

Cat.No. 105 105; Polyclonal Guinea pig 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 : 2000 (AP staining) **IP**: not tested yet **ICC**: 1 : 500 (see remarks) **IHC**: 1 : 500 **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). 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 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 105 105

Actions of Rab27B-GTPase on mammalian central excitatory synaptic transmission.
Arias-Hervert ER, Xu N, Njus M, Murphy GG, Hou Y, Williams JA, Lentz SI, Ernst SA, Stuenkel EL
Physiological reports (2020) 89: e14428. . **WB; tested species: mouse**

BDNF enhances spontaneous and activity-dependent neurotransmitter release at excitatory terminals but not at inhibitory terminals in hippocampal neurons.
Shinoda Y, Ahmed S, Ramachandran B, Bharat V, Brockelt D, Altas B, Dean C
Frontiers in synaptic neuroscience (2014) 6: 27. . **ICC; tested species: rat**

Activation of the glucocorticoid receptor rapidly triggers calcium-dependent serotonin release in vitro.
Paul N, Raymond J, Lumbreras S, Bartsch D, Weber T, Lau T
CNS neuroscience & therapeutics (2021) : . . **ICC; tested species: mouse**

Neuronal α-amylase is important for neuronal activity and glycogenolysis and reduces in presence of amyloid beta pathology.
Byman E, Martinsson I, Haukedal H, , Gouras G, Freude KK, Wennström M
Aging cell (2021) : e13433. . **ICC; tested species: mouse**

A novel method for culturing stellate astrocytes reveals spatially distinct Ca2+ signaling and vesicle recycling in astrocytic processes.
Wolfes AC, Ahmed S, Awasthi A, Stahlberg MA, Rajput A, Magruder DS, Bonn S, Dean C
The Journal of general physiology (2017) 1491: 149-170. . **ICC**

Selected General References

RAB3 and synaptotagmin: the yin and yang of synaptic membrane fusion.
Geppert M et al. Annu. Rev. Neurosci. (1998) PubMed:9530492

The synaptic vesicle cycle: a cascade of protein-protein interactions.
Südhof TC et al. Nature (1995) PubMed:7791897

Synaptic vesicles and exocytosis.
Jahn R et al. Annu. Rev. Neurosci. (1994) PubMed:8210174

Synaptotagmin I: a major Ca2+ sensor for transmitter release at a central synapse.
Geppert M et al. Cell (1994) PubMed:7954835

Synaptotagmin: a calcium sensor on the synaptic vesicle surface.
Brose N et al. Science (1992) PubMed:1589771

Phospholipid binding by a synaptic vesicle protein homologous to the regulatory region of protein kinase C.
Perin MS et al. Nature (1990) PubMed:2333096

Access the online factsheet including applicable protocols at https://sysy.com/product/105105 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.