SYSY Antibodies

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# Synaptotagmin3

**Cat.No. 105 133; 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)<br>**IP**: not tested yet<br>**ICC**: 1 : 500 up to 1 : 1000<br>**IHC**: 1 : 500<br>**IHC-P (FFPE)**: not tested yet |
| Immunogen | Recombinant protein corresponding to AA 123 to 154 from human Synaptotagmin3 (UniProt Id: Q9BQG1) |
| Reactivity | Reacts with: rat (P40748), mouse (O35681), human (Q9BQG1). Other species not tested yet. |
| Specificity | K.O. validated PubMed: 30545844 |

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

## Background

Up to now at least 17 synaptotagmins have been identified. Like other proteins of this family **synaptotagmin3** is composed of a vesicular, a transmembrane and two C2 domains. Synaptotagmin3 is expressed in brain, where it localizes to synaptic plasma membranes, and also in non-neuronal cells. In pancreatic islet β-cells it is involved in $Ca^{2+}$ triggered insulin secretion, and in basophilic leukemia mast cells (RBL-cells) in transport events to the perinuclear endocytic recycling compartment.

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

## Selected References for 105 133

Synaptotagmin-3 drives AMPA receptor endocytosis, depression of synapse strength, and forgetting.
Awasthi A, Ramachandran B, Ahmed S, Benito E, Shinoda Y, Nitzan N, Heukamp A, Rannio S, Martens H, Barth J, Burk K, et al.
Science (New York, N.Y.) (2018) : . . **WB, IHC; KO verified; tested species: mouse**

Axonal and dendritic synaptotagmin isoforms revealed by a pHluorin-syt functional screen.
Dean C, Dunning FM, Liu H, Bomba-Warczak E, Martens H, Bharat V, Ahmed S, Chapman ER
Molecular biology of the cell (2012) 239: 1715-27. . **ICC**

Heterozygosity for neurodevelopmental disorder-associated TRIO variants yields distinct deficits in behavior, neuronal development, and synaptic transmission in mice.
Ishchenko Y, Jeng AT, Feng S, Nottoli T, Manriquez-Rodriguez C, Nguyen KK, Carrizales MG, Vitarelli MJ, Corcoran EE, Greer CA, Myers SA, et al.
eLife (2025) 13: . . **WB; tested species: mouse**

Synaptotagmins 3 and 7 mediate the majority of asynchronous release from synapses in the cerebellum and hippocampus.
Weingarten DJ, Shrestha A, Orlin DJ, Le Moing CL, Borchardt LA, Jackman SL
Cell reports (2024) 438: 114595. . **IHC; KO verified; tested species: mouse**

## Selected General References

Synaptotagmin III is a critical factor for the formation of the perinuclear endocytic recycling compartment and determination of secretory granules size.
Grimberg E et al. J. Cell. Sci. (2003) PubMed:12456724

Synaptotagmin III/VII isoforms mediate Ca2+-induced insulin secretion in pancreatic islet beta -cells.
Gao Z et al. J. Biol. Chem. (2000) PubMed:10938083

The subcellular localizations of atypical synaptotagmins III and VI. Synaptotagmin III is enriched in synapses and synaptic plasma membranes but not in synaptic vesicles.
Butz S et al. J. Biol. Chem. (1999) PubMed:10373432

Ca(2+)-dependent and -independent activities of neural and non-neural synaptotagmins.
Li C et al. Nature (1995) PubMed:7791877

A third synaptotagmin gene, Syt3, in the mouse.
Hilbush BS et al. Proc. Natl. Acad. Sci. U.S.A. (1994) PubMed:8058779

Access the online factsheet including applicable protocols at https://sysy.com/product/105133 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.