

## 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 <b>reconstitution</b> add 50 µl H <sub>2</sub> O 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	<b>WB:</b> 1 : 1000 (AP staining) <b>IP:</b> not tested yet <b>ICC:</b> 1 : 500 up to 1 : 1000 <b>IHC:</b> 1 : 500 <b>IHC-P:</b> 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: <a href="https://pubmed.ncbi.nlm.nih.gov/30545844/">30545844</a>

**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<sup>2+</sup> 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 Ca<sup>2+</sup>-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 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 at 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.