SYSY Antibodies

Rudolf-Wissell-Str. 28a
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: www.sysy.com

Synaptotagmin2 luminal domain

Cat.No. 105 223; 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 **IHC-P (FFPE)**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 1 to 11 from mouse Synaptotagmin2 (UniProt Id: P46097)
Reactivity	Reacts with: rat (P29101), mouse (P46097). Other species not tested yet.
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

Synaptotagmin2 is an integral membrane glycoprotein of neuronal synaptic vesicles. It is very similar to synaptotagmin1 but shows a partly complementary expression pattern in the CNS. Synaptotagmin2 lacks a CAMK II/PKC phosphorylation site which is present in synaptotagmin1.
Recently synaptotagmin2 has been shown to be an alternative Ca^{2+} sensor for fast secretion.

Selected References for 105 223

Astrocyte-secreted neurocan controls inhibitory synapse formation and function.
Irala D, Wang S, Sakers K, Nagendren L, Ulloa Severino FP, Bindu DS, Savage JT, Eroglu C
Neuron (2024) 11210: 1657-1675.e10. . **ICC, IHC; tested species: mouse,rat**

Harnessing synaptic vesicle release and recycling with antibody shuttle for targeted delivery of therapeutics to neurons.
Yee KKL, Kumamoto J, Inomata D, Suzuki N, Harada R, Yumoto N
Molecular therapy. Methods & clinical development (2025) 332: 101476. . **ICC, UPTAKE; tested species: human**

The proteomic landscape of synaptic diversity across brain regions and cell types.
van Oostrum M, Blok TM, Giandomenico SL, Tom Dieck S, Tushev G, Fürst N, Langer JD, Schuman EM
Cell (2023) 18624: 5411-5427.e23. . **IHC; tested species: mouse**

The complement inhibitor CD59 is required for GABAergic synaptic transmission in the dentate gyrus.
Wen L, Yang X, Wu Z, Fu S, Zhan Y, Chen Z, Bi D, Shen Y
Cell reports (2023) 424: 112349. . **IHC; tested species: mouse**

Chronic partial TrkB activation reduces seizures and mortality in a mouse model of Dravet syndrome.
Gu F, Parada I, Yang T, Longo FM, Prince DA
Proceedings of the National Academy of Sciences of the United States of America (2022) 1197: . . **IHC; tested species: mouse**

Myelination synchronizes cortical oscillations by consolidating parvalbumin-mediated phasic inhibition.
Dubey M, Pascual-Garcia M, Helmes K, Wever DD, Hamada MS, Kushner SA, Kole MHP
eLife (2022) 11: . . **IHC; tested species: mouse**

ROCK/PKA inhibition rescues hippocampal hyperexcitability and GABAergic neuron alterations in Oligophrenin-1 Knock-out mouse model of X-linked intellectual disability.
Busti I, Allegra M, Spalletti C, Panzi C, Restani L, Billuart P, Caleo M
The Journal of neuroscience : the official journal of the Society for Neuroscience (2020) : . . **IHC; tested species: mouse**

Inositol polyphosphate multikinase deficiency leads to aberrant induction of synaptotagmin-2 in the forebrain.
Park J, Park SJ, Kim S
Molecular brain (2019) 121: 58. . **IHC; 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**

Selected General References

Synaptotagmin-2 is essential for survival and contributes to Ca2+ triggering of neurotransmitter release in central and neuromuscular synapses.
Pang ZP et al. J. Neurosci. (2006) PubMed:17192432

Genetic analysis of synaptotagmin 2 in spontaneous and Ca2+-triggered neurotransmitter release.
Pang ZP et al. EMBO J. (2006) PubMed:16642042

WNK1 phosphorylates synaptotagmin 2 and modulates its membrane binding.
Lee BH et al. Mol. Cell (2004) PubMed:15350218

Access the online factsheet including applicable protocols at https://sysy.com/product/105223 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.