SYSY Antibodies

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Synaptotagmin2 luminal domain

Cat.No. 105 225; 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 : 1000 (AP staining) **IP**: yes **ICC**: 1 : 500 up to 1 : 1000 **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: mouse (P46097), rat (P29101). Other species not tested yet.

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 105 225

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**

Activation of GluN2D-containing NMDA receptors promotes development of axons and axon-carrying dendrites of cortical interneurons.
Köhler I, Rennau LM, Hoffmann L, Demianchuk E, Kaczmarski M, Sobierajski E, Riedel C, Wahle P
Cerebral cortex (New York, N.Y. : 1991) (2025) 356: . . **WB; tested species: rat**

Simulations of active zone structure and function at mammalian NMJs predict that loss of calcium channels alone is not sufficient to replicate LEMS effects.
Ginebaugh SP, Badawi Y, Laghaei R, Mersky G, Wallace CJ, Tarr TB, Kaufhold C, Reddel S, Meriney SD
Journal of neurophysiology (2023) : . . **IHC; tested species: mouse**

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

Synaptotagmin II could confer Ca(2+) sensitivity to phagocytosis in human neutrophils.
Lindmark IM et al. Biochim. Biophys. Acta (2002) PubMed:12063179

Amino acid residues before the hydrophobic region which are critical for membrane translocation of the N-terminal domain of synaptotagmin II.
Kida Y et al. FEBS Lett. (2001) PubMed:11696368

Synaptotagmin II negatively regulates Ca2+-triggered exocytosis of lysosomes in mast cells.
Baram D et al. J. Exp. Med. (1999) PubMed:10330444

Synaptotagmin II. A novel differentially distributed form of synaptotagmin.
Geppert M et al. J. Biol. Chem. (1991) PubMed:1856191

Access the online factsheet including applicable protocols at https://sysy.com/product/105225 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.