SYSY Antibodies

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Syntaxin1A

Cat.No. 110 302; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For **reconstitution** add 200 µl H_2O, then aliquot and store at -20°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 **IHC**: not tested yet **IHC-P (FFPE)**: not tested yet **ELISA**: yes (see remarks)
Immunogen	Synthetic peptide corresponding to AA 172 to 189 from rat Syntaxin1A (UniProt Id: P32851)
Reactivity	Reacts with: human (Q16623), rat (P32851), mouse (O35526), cow. No signal: zebrafish. Other species not tested yet.
Specificity	Specific for syntaxin 1A, no cross reactivity to syntaxin 1B. K.O. validated PubMed: 28031464
Remarks	**ELISA**: The ELISA-protocol for membrane proteins is required. Suitable as detector antibody for sandwich-ELISA. Please refer to the protocol for suitable capture antibodies.

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

Background

Syntaxin 1, also known as **p35**, is a small integral membrane protein that is abundantly expressed in neurons and neuroendocrine cells. It was initially discovered as HPC-1. Syntaxin 1 is an essential component of the exocytotic fusion machine and interacts with several other proteins important for synaptic function, including its partners in the fusion complex synaptobrevin, SNAP 25, α-SNAP, synaptotagmin 1, Munc 18/n-Sec1 and Ca^{2+}-channels.
Syntaxin 1 is localized primarily to the neuronal plasmalemma and is concentrated in synapses where pools of the protein are also present on recycling organelles including synaptic vesicles. It is the main target of one of the Botulinum neurotoxins BoNT/C1 which, however, cannot cleave the protein when complexed with its partner proteins in the fusion complex.

Selected References for 110 302

Munc18-1 controls SNARE protein complex assembly during human sperm acrosomal exocytosis.
Rodríguez F, Zanetti MN, Mayorga LS, Tomes CN
The Journal of biological chemistry (2012) 28752: 43825-39. . **WB, ICC; tested species: human**

New Roles of Syntaxin-1A in Insulin Granule Exocytosis and Replenishment.
Liang T, Qin T, Xie L, Dolai S, Zhu D, Prentice KJ, Wheeler M, Kang Y, Osborne L, Gaisano HY
The Journal of biological chemistry (2017) 2926: 2203-2216. . **WB, IHC; KO verified; tested species: mouse**

Point mutation in syntaxin-1A causes abnormal vesicle recycling, behaviors, and short term plasticity.
Watanabe Y, Katayama N, Takeuchi K, Togano T, Itoh R, Sato M, Yamazaki M, Abe M, Sato T, Oda K, Yokoyama M, et al.
The Journal of biological chemistry (2013) 28848: 34906-19. . **WB, IP; tested species: mouse**

Syntabulin regulates neuronal excitation/inhibition balance and epileptic seizures by transporting syntaxin 1B.
Ke P, Gu J, Liu J, Liu Y, Tian X, Ma Y, Meng Y, Xiao F
Cell death discovery (2023) 91: 187. . **WB, IP; tested species: mouse**

Plasma membrane flipping of Syntaxin-2 regulates its inhibitory action on insulin granule exocytosis.
Kang F, Xie L, Qin T, Miao Y, Kang Y, Takahashi T, Liang T, Xie H, Gaisano HY
Nature communications (2022) 131: 6512. . **IP, WB; tested species: human,mouse**

Ectopic expression of syntaxin 1 in the ER redirects TI-VAMP- and cellubrevin-containing vesicles.
Martinez-Arca S, Proux-Gillardeaux V, Alberts P, Louvard D, Galli T
Journal of cell science (2003) 116Pt 13: 2805-16. . **WB, ICC**

Chromogranin B plays an essential role in post-endoplasmic reticulum sorting of dense-core vesicle cargo.
Mukherjee C, Chauksey P, Mukherjee M, Dagar S, Sadhukhan S, Klumperman J, Sahu BS
Journal of cell science (2026) 1398: . . **ICC; tested species: mouse**

Disrupting stroke-induced GAT-1-syntaxin1A interaction promotes functional recovery after stroke.
Lin YH, Wu F, Li TY, Lin L, Gao F, Zhu LJ, Xu XM, Chen MY, Hou YL, Zhang CJ, Wu HY, et al.
Cell reports. Medicine (2024) 511: 101789. . **WB; tested species: mouse**

Analysis of the neuromuscular deficits caused by STAM1 deficiency.
McLean JW, VanHart M, McWilliams MP, Farmer CB, Crossman DK, Cowell RM, Wilson JA, Wilson SM
Current research in neurobiology (2024) 7: 100138. . **WB; tested species: mouse**

α-Synuclein induced cholesterol lowering increases tonic and reduces depolarization-evoked synaptic vesicle recycling and glutamate release.
Lazarevic V, Yang Y, Paslawski W, Svenningsson P
NPJ Parkinson's disease (2022) 81: 71. . **ICC; tested species: mouse**

A novel synaptopathy-defective synaptic vesicle protein trafficking in the mutant CHMP2B mouse model of frontotemporal dementia.
Clayton EL, Bonnycastle K, Isaacs AM, Cousin MA, Schorge S
Journal of neurochemistry (2022) 1603: 412-425. . **WB; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/110302 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.