SYSY Antibodies

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Syntaxin1A

Cat.No. 110 111; Recombinant mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For **reconstitution** add 100 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 up to 1 : 10000 (AP staining) **IP**: yes (see remarks) **ICC**: 1 : 200 up to 1 : 1000 **IHC**: 1 : 500 (see remarks) **IHC-P (FFPE)**: 1 : 500 **DNA-PAINT**: external data (see remarks) **EM**: external data (see remarks)
Clone	78.3
Subtype	IgG2a (κ light chain)
Immunogen	Recombinant protein corresponding to cytoplasmic-domain without membrane anchor of rat Syntaxin 1A. (UniProt Id: P32851)
Reactivity	Reacts with: human (Q16623), rat (P32851), mouse (O35526), mammals, chicken. Other species not tested yet.
Specificity	Specific for syntaxin 1A, no cross-reactivity to syntaxin 1B. K.O. validated PubMed: 38512129
Matching control	110-1P
Remarks	**IP**: Immunoprecipitates syntaxin1A including complexes with synaptobrevin and SNAP25. **IHC**: Antigen retrieval with citrate buffer pH 6 is required. **DNA-PAINT**: This antibody has been successfully applied and published for this method by customers (see application-specific references). **EM**: This antibody has been successfully applied and published for this method by customers (see application-specific references).

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 110 111

Syntaxin 8 impairs trafficking of cystic fibrosis transmembrane conductance regulator (CFTR) and inhibits its channel activity.
Bilan F, Thoreau V, Nacfer M, Dérand R, Norez C, Cantereau A, Garcia M, Becq F, Kitzis A
Journal of cell science (2004) 117Pt 10: 1923-35. . **WB, ICC**

MAFA and MAFB regulate exocytosis-related genes in human β-cells.
Cataldo LR, Singh T, Achanta K, Bsharat S, Prasad RB, Luan C, Renström E, Eliasson L, Artner I
Acta physiologica (Oxford, England) (2022) 2342: e13761. . **WB, IHC; tested species: mouse**

Syntaxin 4 is concentrated on plasma membrane of astrocytes.
Tao-Cheng JH, Pham A, Yang Y, Winters CA, Gallant PE, Reese TS
Neuroscience (2015) 286: 264-71. . **WB, EM**

SNARE-catalyzed fusion events are regulated by Syntaxin1A-lipid interactions.
Lam AD, Tryoen-Toth P, Tsai B, Vitale N, Stuenkel EL
Molecular biology of the cell (2008) 192: 485-97. . **WB, IP; tested species: rat**

ER stress disrupts insulin release in murine models of type 2 diabetes by impairing retromer action and constitutive secretion.
Sue N, Thai LM, Boslem E, Chu KY, Yan C, Mackin L, Hughes WE, Fontaine-Titley A, Barkauskas D, Cottle L, Thomas HE, et al.
Cell reports (2025) 445: 115691. . **WB, ICC; tested species: mouse**

The stability of the primed pool of synaptic vesicles and the clamping of spontaneous neurotransmitter release rely on the integrity of the C-terminal half of the SNARE domain of syntaxin-1A.
Salazar Lázaro A, Trimbuch T, Vardar G, Rosenmund C
eLife (2024) 12: . . **WB, ICC; KO verified; tested species: mouse**

The lipid transporter ORP2 regulates synaptic neurotransmitter release via two distinct mechanisms.
Weber-Boyvat M, Kroll J, Trimbuch T, Olkkonen VM, Rosenmund C
Cell reports (2022) 4113: 111882. . **WB, IP; tested species: mouse**

SV31 is a Zn2+-binding synaptic vesicle protein.
Barth J, Zimmermann H, Volknandt W
Journal of neurochemistry (2011) 1184: 558-70. . **WB, ICC**

The R-SNARE motif of tomosyn forms SNARE core complexes with syntaxin 1 and SNAP-25 and down-regulates exocytosis.
Hatsuzawa K, Lang T, Fasshauer D, Bruns D, Jahn R
The Journal of biological chemistry (2003) 27833: 31159-66. . **WB, ICC**

Lipopolysaccharide augments microglial GABA uptake by increasing GABA transporter-1 trafficking and bestrophin-1 expression.
Di Palma M, Catalano M, Serpe C, De Luca M, Monaco L, Kunzelmann K, Limatola C, Conti F, Fattorini G
Glia (2023) 7111: 2527-2540. . **DNA_PAINT; tested species: mouse**

Astroglial TNFR2 signaling regulates hippocampal synaptic function and plasticity in a sex dependent manner.
Carney BN, Illiano P, Pohl TM, Desu HL, Mini A, Mudalegundi S, Asencor AI, Jwala S, Ascona MC, Singh PK, Titus DJ, et al.
Brain, behavior, and immunity (2025) 129: 757-777. . **WB; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/110111 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.