SYSY Antibodies

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SNAP25

Cat.No. 111 111; Monoclonal mouse antibody, 50 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg purified IgG, lyophilized. 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 : 10000 (AP staining) **IP**: yes (see remarks) **ICC**: 1 : 100 up to 1 : 500 **IHC**: 1 : 200 **IHC-P (FFPE)**: 1 : 1000 **ELISA**: yes (see remarks)
Clone	71.2
Subtype	IgG1 (κ light chain)
Immunogen	Full-length recombinant rat SNAP25B protein (UniProt Id: P60881-1)
Epitop	AA 1 to 20 from rat SNAP25B (UniProt Id: P60881-1)
Reactivity	Reacts with: human (P60880), rat (P60881), mouse (P60879), mammals, bovine. No signal: zebrafish. Other species not tested yet.
Specificity	Detects both splice variants SNAP 25A and B. Recognizes the Botulinum neurotoxin A and E cleavage products.
Remarks	**IP**: Immunoprecipitation not quantitative, appears to depend on the binding status of the protein. **ELISA**: The ELISA-protocol for membrane proteins is required. Suitable as capture antibody for sandwich-ELISA. Please refer to the protocol for suitable detector antibodies.

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

Background

SNAP25 (**s**y**n**aptosome-**a**ssociated **p**rotein of **25** kD) is a highly conserved protein anchored to the cytosolic face of membranes via palmitoyl side chains in the middle of the molecule. SNAP25 is the target of Botulinum neurotoxins A and E which cleave off 9 and 26 amino acids, respectively, from the C-terminus.
SNAP25 is part of the exocytotic fusion complex (v-SNARE) of neurons where it assembles with syntaxin1 and synaptobrevin. It is abundantly localized on the neuronal plasmalemma and on recycling vesicles including synaptic vesicles. It is also expressed in neuroendocrine cells. There are two splice-variants, SNAP25A and 25B.

Selected References for 111 111

Aberrant function and structure of retinal ribbon synapses in the absence of complexin 3 and complexin 4.
Reim K, Regus-Leidig H, Ammermüller J, El-Kordi A, Radyushkin K, Ehrenreich H, Brandstätter JH, Brose N
Journal of cell science (2009) 122Pt 9: 1352-61. . **WB, IHC; tested species: mouse**

Spatial proteomics in neurons at single-protein resolution.
Unterauer EM, Shetab Boushehri S, Jevdokimenko K, Masullo LA, Ganji M, Sograte-Idrissi S, Kowalewski R, Strauss S, Reinhardt SCM, Perovic A, Marr C, et al.
Cell (2024) 1877: 1785-1800.e16. . **DNA_PAINT; tested species: rat**

Positively charged amino acids at the SNAP-25 C terminus determine fusion rates, fusion pore properties, and energetics of tight SNARE complex zippering.
Fang Q, Zhao Y, Herbst AD, Kim BN, Lindau M
The Journal of neuroscience : the official journal of the Society for Neuroscience (2015) 357: 3230-9. . **ICC; tested species: cow**

Synapsin-dependent reserve pool of synaptic vesicles supports replenishment of the readily releasable pool under intense synaptic transmission.
Vasileva M, Horstmann H, Geumann C, Gitler D, Kuner T
The European journal of neuroscience (2012) 368: 3005-20. . **ELISA**

The N-ethylmaleimide-sensitive fusion protein and alpha-SNAP induce a conformational change in syntaxin.
Hanson PI, Otto H, Barton N, Jahn R
The Journal of biological chemistry (1995) 27028: 16955-61. . **IP**

A belt-buckle checkpoint regulates the onset of botulinum neurotoxin intoxication.
Chen B, Gao L, Bönninger M, Huang T, Krez N, Wen W, Bowen M, Lou J, Marks JD, Rummel A, Jin R, et al.
Nature communications (2026) 171: . . **WB; tested species: mouse**

RTP004 Peptide Binds to Botulinum Neurotoxin, Increases Cell Surface Binding, and Enhances Cellular SNAP-25 Cleavage.
Batista AF, Singh R, Lee F, Zhuo S, Leonoudakis D, Gallagher CJ
Toxins (2026) 183: . . **WB; tested species: human**

Catecholaminergic dysfunction drives postural and locomotor deficits in a mouse model of spinal muscular atrophy.
Pagiazitis JG, Delestrée N, Sowoidnich L, Sivakumar N, Simon CM, Chatzisotiriou A, Albani M, Mentis GZ
Cell reports (2025) 441: 115147. . **IHC; tested species: mouse**

Monitoring of activity-driven trafficking of endogenous synaptic proteins through proximity labeling.
Pascual-Caro C, de Juan-Sanz J
PLoS biology (2024) 2210: e3002860. . **WB; tested species: rat**

Proximity labelling reveals effects of disease-causing mutation on the DNAJC5/cysteine string protein α interactome.
Barker E, Milburn A, Helassa N, Hammond D, Sanchez-Soriano N, Morgan A, Barclay J
The Biochemical journal (2024) : . . **WB; tested species: rat**

LRRTMs Organize Synapses through Differential Engagement of Neurexin and PTPσ.
Roppongi RT, Dhume SH, Padmanabhan N, Silwal P, Zahra N, Karimi B, Bomkamp C, Patil CS, Champagne-Jorgensen K, Twilley RE, Zhang P, et al.
Neuron (2020) : . . **WB; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/111111 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.