

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 ₂ O 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: 1 : 1000 ELISA: yes (see remarks)
Clone	71.2
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 206 from rat SNAP25B (UniProt Id: P60881-1)
Epitop	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: Suitable as capture antibody for sandwich-ELISA with cat. no. 111 002 as detector antibody. The ELISA-protocol for membrane proteins is recommended.

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

Background

SNAP 25 (synaptosome-associated protein of 25 kDa) is a highly conserved protein anchored to the cytosolic face of membranes via palmitoyl side chains in the middle of the molecule. SNAP 25 is the target of Botulinum neurotoxin A and E which cleave off 9 and 26 amino acids, respectively, from the C-terminus.

SNAP 25 is part of the exocytotic fusion complex (v-SNARE) of neurons where it assembles with syntaxin 1 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, SNAP 25A 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**

Proximity labelling reveals effects of disease-causing mutation on the DNAJC5/cysteine string protein 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**

VAMP4 maintains a Ca²⁺-sensitive pool of spontaneously recycling synaptic vesicles.

Lin PY, Chanaday NL, Horvath PM, Ramirez DMO, Monteggia LM, Kavalali ET

The Journal of neuroscience : the official journal of the Society for Neuroscience (2020) : . . **WB; tested species: rat**

Potential Protection Against Type 2 Diabetes in Obesity Through Lower CD36 Expression and Improved Exocytosis in β-Cells.

Nagao M, Esguerra JLS, Asai A, Ofori JK, Edlund A, Wendt A, Sugihara H, Wollheim CB, Oikawa S, Eliasson L

Diabetes (2020) 696: 1193-1205. . **WB; tested species: human**

Role of Aberrant Spontaneous Neurotransmission in SNAP25-Associated Encephalopathies.

Alten B, Zhou Q, Shin OH, Esquivies L, Lin PY, White KI, Sun R, Chung WK, Monteggia LM, Brunger AT, Kavalali ET, 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 our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.