SYSY Antibodies

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SNAP25

Cat.No. 111 011; 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 : 1000 up to 1 : 10000 (AP staining) **IP**: yes (see remarks) **ICC**: 1 : 500 up to 1 : 1000 **IHC**: not recommended **IHC_P**: 1 : 2000 **EM**: yes
Clone	71.1
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 206 from rat SNAP25B (UniProt Id: P60881-1)
Epitop	Epitop: AA 20 to 40 from rat SNAP25B (UniProt Id: P60881-1)
Reactivity	Reacts with: human (P60880), rat (P60881), mouse (P60879), vertebrates, invertebrates, zebrafish. Other species not tested yet.
Specificity	Detects both splice variants SNAP 25A and B. Recognizes the Botulinum neurotoxin A and E cleavage products. K.O. PubMed: 31794878
Remarks	**IP**: Immunoprecipitation not quantitative, appears to depend on the binding status of the protein.

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

Background

SNAP 25 (**syn**aptosome-**a**ssociated **p**rotein 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 111 011

CaV2.2 Gates Calcium-Independent but Voltage-Dependent Secretion in Mammalian Sensory Neurons.
Chai Z, Wang C, Huang R, Wang Y, Zhang X, Wu Q, Wang Y, Wu X, Zheng L, Zhang C, Guo W, et al.
Neuron (2017) 966: 1317-1326.e4. . **WB, IP, ICC; tested species: rat**

The phosphoprotein Synapsin Ia regulates the kinetics of dense-core vesicle release.
Yang HJ, Chen PC, Huang CT, Cheng TL, Hsu SP, Chen CY, Lu JC, Wang CT
The Journal of neuroscience : the official journal of the Society for Neuroscience (2021) : . . **WB, ICC; tested species: rat**

Endophilin-A coordinates priming and fusion of neurosecretory vesicles via intersectin.
Gowrisankaran S, Houy S, Del Castillo JGP, Steubler V, Gelker M, Kroll J, Pinheiro PS, Schwitters D, Halbsgut N, Pechstein A, van Weering JRT, et al.
Nature communications (2020) 111: 1266. . **WB, ICC; tested species: mouse**

Aggregation of mutant cysteine string protein-α via Fe-S cluster binding is mitigated by iron chelators.
Naseri NN, Ergel B, Kharel P, Na Y, Huang Q, Huang R, Dolzhanskaya N, Burré J, Velinov MT, Sharma M
Nature structural & molecular biology (2020) 272: 192-201. . **WB, IP; tested species: mouse**

Composition of isolated synaptic boutons reveals the amounts of vesicle trafficking proteins.
Wilhelm BG, Mandad S, Truckenbrodt S, Kröhnert K, Schäfer C, Rammner B, Koo SJ, Claßen GA, Krauss M, Haucke V, Urlaub H, et al.
Science (New York, N.Y.) (2014) 3446187: 1023-8. . **ICC, WB; tested species: rat**

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

A High-Resolution Method for Quantitative Molecular Analysis of Functionally Characterized Individual Synapses.
Holderith N, Heredi J, Kis V, Nusser Z
Cell reports (2020) 324: 107968. . **IHC; tested species: rat**

Distinct axo-somato-dendritic distributions of three potassium channels in CA1 hippocampal pyramidal cells.
Kirizs T, Kerti-Szigeti K, Lorincz A, Nusser Z
The European journal of neuroscience (2014) 3911: 1771-83. . **EM; tested species: rat**

Synaptic biomarkers in the cerebrospinal fluid associate differentially with classical neuronal biomarkers in patients with Alzheimer's disease and frontotemporal dementia.
Das S, Goossens J, Jacobs D, Dewit N, Pijnenburg YAL, In 't Veld SGJG, Teunissen CE, Vanmechelen E
Alzheimer's research & therapy (2023) 151: 62. . **IP; tested species: human**

Neurotransmitter release progressively desynchronizes in induced human neurons during synapse maturation and aging.
Uzay B, Houcek A, Ma ZZ, Konradi C, Monteggia LM, Kavalali ET
Cell reports (2023) 422: 112042. . **WB; tested species: human**

Hemisynapse Formation Between Target Astrocytes and Cortical Neuron Axons in vitro.
Teng Z, Gottmann K
Frontiers in molecular neuroscience (2022) 15: 829506. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/111011 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.