

Synaptobrevin2 (VAMP2)

Cat.No. 104 211; 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 : 2000 up to 1 : 20000 (AP staining) IP: yes ICC: 1 : 1000 IHC: 1 : 500 up to 1 : 1000 IHC-P: 1 : 500 DNA-PAINT: yes (see remarks) EM: yes ELISA: yes (see remarks)
Clone	69.1
Subtype	IgG1 (κ light chain)
Immunogen	Synthetic peptide corresponding to residues near the amino terminus of rat Synaptobrevin2 (UniProt Id: P63045)
Reactivity	Reacts with: human (P63027), rat (P63045), mouse (P63044), hamster. No signal: chicken, zebrafish. Other species not tested yet.
Specificity	K.O. validated PubMed: 26663078
Matching control	104-2P
Remarks	Although the epitope is still present in the Botox B cleavage product (aa 1 - 76), it is not recognized, probably due to conformational masking of the epitope. DNA-PAINT: This antibody has been successfully used for DNA-PAINT application (see Unterauer et al., 2024; PMID: 38552614). ELISA: Suitable capture antibody for sandwich-ELISA with cat. no. 104 102 or 104 203 as detector. 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

Synaptobrevins/VAMPs represents a family of integral membrane proteins of 11-13 kDa with the N-terminal region exposed to the cytoplasm and a C-terminal transmembrane domain. Two isoforms were identified in the mammalian CNS, synaptobrevin1 (VAMP1 or p18-1) and **synaptobrevin2** (VAMP2 or p18-2) that differ in their distribution within different brain regions. Synaptobrevin1 is highly conserved between vertebrates and invertebrates. It is a major constituent of synaptic vesicles and peptidergic secretory granules in all neurons examined so far. In addition, it is present on secretory granules of neuroendocrine cells. Low levels of synaptobrevin2 are present in many other tissues where the protein resides on specialized microvesicles. In non-neuronal cells the third isoform, cellubrevin (VAMP3), is present where it is localized to an endosomal membrane pool. Synaptobrevin/VAMP is an essential component of the exocytotic fusion machine, related to a larger protein family referred to as v-SNAREs. It is the sole target for tetanus and several of the botulinic neurotoxins which cleave the protein at single sites in the C-terminal portion of the molecule.

Selected References for 104 211

- Distribution of SNAP25, VAMP1 and VAMP2 in mature and developing deep cerebellar nuclei after estrogen administration. Manca P, Marnett O, Caria MA, Torrejón-Escribano B, Blasi J Neuroscience (2014) 266: 102-15. . **IHC, EM, WB**
- Activity-Dependent Degradation of Synaptic Vesicle Proteins Requires Rab35 and the ESCRT Pathway. Sheehan P, Zhu M, Beskow A, Vollmer C, Waites CL The Journal of neuroscience : the official journal of the Society for Neuroscience (2016) 3633: 8668-86. . **WB, IP, ICC; tested species: rat**
- Synaptic vesicle proteins and ATG9A self-organize in distinct vesicle phases within synapsin condensates. Park D, Wu Y, Wang X, Gowrishankar S, Baublis A, De Camilli P Nature communications (2023) 141: 455. . **WB, IP, ICC; tested species: mouse**
- Vesicular transport system in myotubes: ultrastructural study and signposting with vesicle-associated membrane proteins. Tajika Y, Takahashi M, Khairani AF, Ueno H, Murakami T, Yorifuji H Histochemistry and cell biology (2014) 1414: 441-54. . **WB, ICC, EM; tested species: mouse**
- Synaptotagmin I, synaptobrevin II, and syntaxin I are coexpressed in rat and gerbil pinealocytes. Redeker P Cell and tissue research (1996) 2833: 443-54. . **WB, EM, IHC; tested species: rat**
- Neuronal CD59 isoforms IRIS-1 and IRIS-2 as regulators of neurotransmitter release with implications for Alzheimer's disease. Golec E, Olsson R, Tuysuz EC, Karlsson M, Serjeh Y, King BC, Wennström M, Blom AM Alzheimer's research & therapy (2025) 171: 11. . **WB, ICC; tested species: human**
- Light-dependent regulation of neurotransmitter release from rod photoreceptor ribbon synapses involves an interplay of Complexin 4 and Transducin with the SNARE complex. Lux UT, Meyer J, Jahn O, Davison A, Babai N, Gießl A, Wartenberg A, Sticht H, Brose N, Reim K, Brandstätter JH, et al. Frontiers in molecular neuroscience (2024) 17: 1308466. . **WB, IHC; tested species: mouse**
- Expression, purification and application of a recombinant, membrane permeating version of the light chain of botulinum toxin B. Buzzatto MV, Benegas Guerrero FC, Álvarez PA, Zizzias MP, Polo LM, Tomes CN Bioscience reports (2024) 447: . . **ICC, WB; tested species: rat, human**
- Improving morphological and functional properties of enteric neuronal networks in vitro using a novel upside-down culture approach. Schulte S, Decker D, Nowduri B, Gries M, Christmann A, Meyszner A, Rabe H, Saumer M, Schäfer KH American journal of physiology. Gastrointestinal and liver physiology (2024) : . . **ICC, IHC; tested species: mouse**

Access the online factsheet including applicable protocols at <https://sysy.com/product/104211> 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.