

## VAMP1/2/3

Cat.No. 104 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

### Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. For <b>reconstitution</b> add 100 µl H <sub>2</sub> 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	<b>WB:</b> 1 : 1000 (AP staining) (see remarks) <b>IP:</b> not tested yet <b>ICC:</b> 1 : 100 up to 1 : 500 <b>IHC:</b> 1 : 100 up to 1 : 500 <b>IHC-P:</b> 1 : 500 up to 1 : 1000
Clone	10.1
Subtype	IgG1
Immunogen	Recombinant protein corresponding to AA 1 to 118 from rat Synaptobrevin1 (UniProt Id: Q63666)
Epitop	AA 31 to 98 from rat Synaptobrevin1 (UniProt Id: Q63666)
Reactivity	Reacts with: human (P23763, P63027, Q15836), rat (Q63666, P63045, P63025), mouse (Q62442, P63044, P63024), vertebrates, invertebrates. Other species not tested yet.
Specificity	Detects the three isoforms VAMP 1, 2, 3.
Remarks	This antibody is not recommended for non-neuronal cells. Please use cat. no. 104 102 for such experiments. This antibody reacts with the conserved middle-portion of the molecule. Its affinity/avidity is not very high, thus requiring extended incubation periods and sensitive detection systems. <b>WB:</b> This antibody recognizes the Botulinumtoxin B cleavage product (aa 1 - 76) with reduced affinity. The sensitivity is sufficient for the detection of cleaved recombinant protein. For analysis of toxin treated tissue homogenates cat. no. 104 203 is recommended.

### 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, synaptobrevin 1 (VAMP 1 or p18-1) and synaptobrevin 2 (VAMP 2 or p18-2) that differ in their distribution within different brain regions. Synaptobrevin 1 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 synaptobrevin 2 are present in many other tissues where the protein resides on specialized microvesicles. In non-neuronal cells the third isoform, cellubrevin (VAMP 3), 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 botulin neurotoxins which cleave the protein at single sites in the C-terminal portion of the molecule.

### Selected References for 104 011

SV31 is a Zn<sup>2+</sup>-binding synaptic vesicle protein.  
Barth J, Zimmermann H, Volkandt W  
Journal of neurochemistry (2011) 1184: 558-70. . **WB, ICC**

Synaptotagmin I, synaptobrevin II, and syntaxin I are coexpressed in rat and gerbil pinealocytes.  
Redecker P  
Cell and tissue research (1996) 2833: 443-54. . **IHC; tested species: rat**

Maternal stress programs a demasculinization of glutamatergic transmission in stress-related brain regions of aged rats.  
Verhaeghe R, Gao V, Morley-Fletcher S, Bouwalerh H, Van Camp G, Cisani F, Nicoletti F, Maccari S  
GeroScience (2021) : . . **WB; tested species: rat**

VAPB depletion alters neuritogenesis and phosphoinositide balance in motoneuron-like cells: relevance to VAPB-linked ALS.  
Genevini P, Colombo MN, Venditti R, Marcuzzo S, Colombo SF, Bernasconi P, De Matteis MA, Borgese N, Navone F  
Journal of cell science (2019) : . . **ICC; tested species: mouse**

Homozygous STXBP1 variant causes encephalopathy and gain-of-function in synaptic transmission.  
Lammertse HCA, van Berkel AA, Iacomino M, Toonen RF, Striano P, Gambardella A, Verhage M, Zara F  
Brain : a journal of neurology (2019) : . . **ICC; tested species: mouse**

Hsc70 chaperone activity is required for the cytosolic slow axonal transport of synapsin.  
Ganguly A, Han X, Das U, Wang L, Loi J, Sun J, Gitler D, Caillol G, Leterrier C, Yates JR, Roy S, et al.  
The Journal of cell biology (2017) 2167: 2059-2074. . **ICC; tested species: mouse**

The zebrafish pinball wizard gene encodes WRB, a tail-anchored-protein receptor essential for inner-ear hair cells and retinal photoreceptors.  
Lin SY, Vollrath MA, Mangosing S, Shen J, Cardenas E, Corey DP  
The Journal of physiology (2016) 5944: 895-914. . **IHC; tested species: zebrafish**

A common mechanism for the regulation of vesicular SNAREs on phospholipid membranes.  
Hu K, Rickman C, Carroll J, Davletov B  
The Biochemical journal (2004) 377Pt 3: 781-5. . **WB**

A role for Sec1/Munc18 proteins in platelet exocytosis.  
Schraw TD, Lemons PP, Dean WL, Whiteheart SW  
The Biochemical journal (2003) 374Pt 1: 207-17. . **WB; tested species: human**

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

Access the online factsheet including applicable protocols at <https://sysy.com/product/104011> 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 at 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.