SYSY Antibodies

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VAMP1/2/3

Cat.No. 104 203; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. 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 : 5000 (AP staining) (see remarks) **IP**: not recommended **ICC**: 1 : 500 **IHC**: 1 : 200 **IHC-P (FFPE)**: 1 : 500 **DNA-PAINT**: external data (see remarks) **ELISA**: yes (see remarks)
Immunogen	Recombinant protein corresponding to AA 1 to 82 from rat Cellubrevin (UniProt Id: P63025)
Reactivity	Reacts with: human (P23763, P63027, Q15836), rat (Q63666, P63045, P63025), mouse (Q62442, P63044, P63024), zebrafish. Other species not tested yet.
Specificity	Specific for all three isoforms VAMP 1, 2 and 3. K.D. validated PubMed: 31128202
Remarks	**WB**: This antibody detects the tetanus and Botulinum B toxin cleavage product in toxin treated tissue homogenates. **DNA-PAINT**: This antibody has been successfully applied and published for this method by customers (see application-specific references). **ELISA**: The ELISA-protocol for membrane proteins is required. Suitable as detector antibody for sandwich-ELISA. Please refer to the protocol for suitable capture antibodies.

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, 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 botulinal neurotoxins which cleave the protein at single sites in the C-terminal portion of the molecule.

Selected References for 104 203

Adaptor Protein-3-Mediated Trafficking of TLR2 Ligands Controls Specificity of Inflammatory Responses but Not Adaptor Complex Assembly.
Petnicki-Ocwieja T, Kern A, Killpack TL, Bunnell SC, Hu LT
Journal of immunology (Baltimore, Md. : 1950) (2015) 1959: 4331-40. . **WB, ICC**

Role of SNAREs in the Atopic Dermatitis-related Cytokine Secretion and Skin-Nerve Communication.
Meng J, Wang J, Buddenkotte J, Buhl T, Steinhoff M
The Journal of investigative dermatology (2019) : . . **WB, ICC; KD verified; tested species: human**

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**

Chromogranin B plays an essential role in post-endoplasmic reticulum sorting of dense-core vesicle cargo.
Mukherjee C, Chauksey P, Mukherjee M, Dagar S, Sadhukhan S, Klumperman J, Sahu BS
Journal of cell science (2026) 1398: . . **WB; tested species: mouse**

Generation of self-organized autonomic ganglion organoids from fibroblasts.
Liu S, Xiang K, Yuan F, Xiang M
iScience (2023) 263: 106241. . **ICC; tested species: mouse**

The endothelial diapedesis synapse regulates transcellular migration of human T lymphocytes in a CX3CL1- and SNAP23-dependent manner.
Schoppmeyer R, van Steen ACI, Kempers L, Timmerman AL, Nolte MA, Hombrink P, van Buul JD
Cell reports (2022) 383: 110243. . **WB; tested species: human**

TLR7 trafficking and signaling in B cells is regulated by the MHCII-associated invariant chain.
Tohme M, Maisonneuve L, Achour K, Dussiot M, Maschalidi S, Manoury B
Journal of cell science (2020) 1335: . . **ICC; tested species: mouse**

The Kohlschütter-Tönz syndrome associated gene Rogdi encodes a novel presynaptic protein.
Riemann D, Wallrafen R, Dresbach T
Scientific reports (2017) 71: 15791. . **ICC; tested species: rat**

Botulinum protease-cleaved SNARE fragments induce cytotoxicity in neuroblastoma cells.
Arsenault J, Cuijpers SA, Ferrari E, Niranjan D, Rust A, Leese C, O'Brien JA, Binz T, Davletov B
Journal of neurochemistry (2014) 1295: 781-91. . **ICC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/104203 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.