SYSY Antibodies

Rudolf-Wissell-Str. 28a
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: www.sysy.com

VAMP4

Cat.No. 136 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For **reconstitution** add 200 µl H_2O, then aliquot and store at -20°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 : 100 up to 1 : 1000 (AP staining) **IP**: yes **ICC**: 1 : 100 up to 1 : 500 **IHC**: external data (see remarks) **IHC-P**: not tested yet
Immunogen	Recombinant protein corresponding to AA 1 to 117 from rat VAMP4 (UniProt Id: D4A560)
Reactivity	Reacts with: human (O75379), rat (D4A560), hamster, zebrafish. Other species not tested yet.
Specificity	K.O. validated PubMed: 33931449
Remarks	**IHC**: This antibody has been successfully used and published for this application by customers (see application-specific references). It is not compatible with our standard protocols.

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

Background

VAMP 4 belongs to the family of **v**esicle-**a**ssociated **m**embrane **p**roteins and has a size of 16.5 kDa. It is involved in trans-Golgi network trafficking and and the maturation of secretory granules. VAMP 4 co-immunoprecipitates with syntaxin 6, syntaxin 16, vti1a and vti1b. The highest expression levels are observed in brain but considerable amounts are also detectable in other tissues like heart, spleen and lung. In liver an additional splice variant of approximately 25 kDa has been described.

Selected References for 136 002

VAMP4 directs synaptic vesicles to a pool that selectively maintains asynchronous neurotransmission.
Raingo J, Khvotchev M, Liu P, Darios F, Li YC, Ramirez DM, Adachi M, Lemieux P, Toth K, Davletov B, Kavalali ET, et al.
Nature neuroscience (2012) 155: 738-45. . **WB, ICC, IHC**

The vSNAREs VAMP2 and VAMP4 control recycling and intracellular sorting of post-synaptic receptors in neuronal dendrites.
Bakr M, Jullié D, Krapivkina J, Paget-Blanc V, Bouit L, Petersen JD, Retailleau N, Breillat C, Herzog E, Choquet D, Perrais D, et al.
Cell reports (2021) 3610: 109678. . **WB, ICC, EM; KD verified; tested species: rat**

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. . **WB, ICC, IHC; tested species: mouse,rat**

β1-integrin- and KV1.3 channel-dependent signaling stimulates glutamate release from Th17 cells.
Birkner K, Wasser B, Ruck T, Thalman C, Luchtman D, Pape K, Schmaul S, Bitar L, Krämer-Albers EM, Stroh A, Meuth SG, et al.
The Journal of clinical investigation (2019) : . . **WB, ICC; tested species: mouse**

VAMP2 is implicated in the secretion of antibodies by human plasma cells and can be replaced by other synaptobrevins.
Gómez-Jaramillo L, Romero-García R, Jiménez-Gómez G, Riegle L, Ramos-Amaya AB, Brieva JA, Kelly-Worden M, Campos-Caro A
Cellular & molecular immunology (2018) 154: 353-366. . **WB, ICC; tested species: human**

Annexin A6 and Late Endosomal Cholesterol Modulate Integrin Recycling and Cell Migration.
García-Melero A, Reverter M, Hoque M, Meneses-Salas E, Koese M, Conway JR, Johnsen CH, Alvarez-Guaita A, Morales-Paytuvi F, Elmaghrabi YA, Pol A, et al.
The Journal of biological chemistry (2016) 2913: 1320-35. . **WB, ICC**

Selected SNARE proteins are essential for the polarized membrane insertion of igf-1 receptor and the regulation of initial axonal outgrowth in neurons.
Grassi D, Plonka FB, Oksdath M, Guil AN, Sosa LJ, Quiroga S
Cell discovery (2015) 1: 15023. . **WB, ICC**

The COG complex interacts directly with Syntaxin 6 and positively regulates endosome-to-TGN retrograde transport.
Laufman O, Hong W, Lev S
The Journal of cell biology (2011) 1943: 459-72. . **WB, ICC**

The regulated exocytosis of enlargeosomes is mediated by a SNARE machinery that includes VAMP4.
Cocucci E, Racchetti G, Rupnik M, Meldolesi J
Journal of cell science (2008) 121Pt 18: 2983-91. . **WB, ICC**

Prion protein conversion at two distinct cellular sites precedes fibrillisation.
Ribes JM, Patel MP, Halim HA, Berretta A, Tooze SA, Klöhn PC
Nature communications (2023) 141: 8354. . **ICC; tested species: mouse**

Mapping localization of 21 endogenous proteins in the Golgi apparatus of rodent neurons.
van Bommel DM, Toonen RF, Verhage M
Scientific reports (2023) 131: 2871. . **ICC; tested species: mouse**

Pleiotropic effects of Syntaxin16 identified by gene editing in cultured adipocytes.
Bremner SK, Al Shammari WS, Milligan RS, Hudson BD, Sutherland C, Bryant NJ, Gould GW
Frontiers in cell and developmental biology (2022) 10: 1033501. . **WB; tested species: rat**

Access the online factsheet including applicable protocols at https://sysy.com/product/136002 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.