SYSY Antibodies

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Vti1a

Cat.No. 165 002; 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 : 1000 (AP staining) **IP**: yes **ICC**: 1 : 500 **IHC**: 1 : 500 **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 2 to 185 from mouse Vti1a (UniProt Id: O89116)
Reactivity	Reacts with: rat (Q9JI51), mouse (O89116). Other species not tested yet.
Specificity	K.O. validated
Matching control	165-0P

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

Background

Vti1a and Vti1b are mammalian SNARE proteins which have been identified as homologs of the yeast Vtip protein which is part of several SNARE complexes involved in transport.
Vti1a interacts with the cis-Golgi t-SNARE syntaxin 5 and the trans-Golgi network SNAREs syntaxin 6, syntaxin 16 and vamp 4.
Recently a brain-specific splice variant of Vti1a has been described. This Vti1a-β protein is associated with small synaptic vesicles, clathrin coated vesicles and endosomes. It is part of a SNARE complex different from the synaptic exocytotic compex since it does not co-immunoprecipitate with syntaxin 1 or SNAP 25. It is composed of syntaxin 6, syntaxin 16, vamp 4 and Vti1a-β which may play a role in biogenesis and/or recycling of synaptic vesicles. Nevertheless it behaves like a typical SNARE complex and can bind NSF and α/β-SNAP.

Selected References for 165 002

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**

Proteomic analysis reveals the composition of glutamatergic organelles of auditory inner hair cell.
Cepeda AP, Ninov M, Neef J, Parfentev I, Kusch K, Reisinger E, Jahn R, Moser T, Urlaub H
Molecular & cellular proteomics : MCP (2023) : 100704. . **IHC; tested species: mouse**

The double deficiency of the SNARE proteins vti1a and vti1b affects neurite outgrowth and signaling in N1E-115 neuroblastoma cells.
Kotschnew K, Winkler D, Reckmann J, Mann C, Schweigert A, Tellkamp G, Müller KM, Fischer von Mollard G
European journal of cell biology (2024) 1034: 151461. . **WB; tested species: mouse**

Lysosomal exocytosis releases pathogenic α-synuclein species from neurons in synucleinopathy models.
Xie YX, Naseri NN, Fels J, Kharel P, Na Y, Lane D, Burré J, Sharma M
Nature communications (2022) 131: 4918. . **WB; tested species: mouse**

VAMP4 maintains a Ca2+-sensitive pool of spontaneously recycling synaptic vesicles.
Lin PY, Chanaday NL, Horvath PM, Ramirez DMO, Monteggia LM, Kavalali ET
The Journal of neuroscience : the official journal of the Society for Neuroscience (2020) : . . **WB; tested species: rat**

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**

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**

Calsyntenin-1 shelters APP from proteolytic processing during anterograde axonal transport.
Steuble M, Diep TM, Schätzle P, Ludwig A, Tagaya M, Kunz B, Sonderegger P
Biology open (2012) 18: 761-74. . **WB**

Dual roles of the mammalian GARP complex in tethering and SNARE complex assembly at the trans-golgi network.
Pérez-Victoria FJ, Bonifacino JS
Molecular and cellular biology (2009) 2919: 5251-63. . **WB**

Selected General References

The identification of a novel endoplasmic reticulum to Golgi SNARE complex used by the prechylomicron transport vesicle.
Siddiqi SA et al. J. Biol. Chem. (2006) PubMed:16735505

Access the online factsheet including applicable protocols at https://sysy.com/product/165002 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.