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**: 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 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.