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

SV2 C

Cat.No. 119 202; 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) (see remarks) **IP**: not tested yet **ICC**: 1 : 500 **IHC**: 1 : 200 **IHC_P**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 2 to 16 from rat SV2C (UniProt Id: Q9Z2I6)
Reactivity	Reacts with: human (Q496J9), rat (Q9Z2I6), mouse (Q69ZS6), cow, dog. Other species not tested yet.
Matching control	119-2P
Remarks	**WB**: SV2 C aggregates after boiling, making it necessary to run SDS-PAGE with non-boiled samples.

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

Background

SV2s (**s**ynaptic **v**esicle protein **2**) are integral membrane glycoproteins present in all synaptic vesicles. They have 12 transmembrane domains predicted by sequence analysis. There are three characterized isoforms, **SV2 A**, **SV2 B** and **SV2 C**. SV2 A is expressed ubiquitously throughout the brain and is probably involved in the maintenance of a pool of synaptic vesicles competent for calcium- stimulated exocytosis. SV2 B has a more restricted distribution with varying degrees of coexpression with SV2 A. SV2 C is more closely related to SV2 A but shows a very restricted expression pattern. The highest expression levels were observed in phylogenetically old brain areas like pallidum, the midbrain and the olfactory bulb. SV2 expression has also been observed in other organs. In kidney it localizes to podocytes.

Selected References for 119 202

Quantitative comparison of glutamatergic and GABAergic synaptic vesicles unveils selectivity for few proteins including MAL2, a novel synaptic vesicle protein.
Grønborg M, Pavlos NJ, Brunk I, Chua JJ, Münster-Wandowski A, Riedel D, Ahnert-Hilger G, Urlaub H, Jahn R
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 301: 2-12. . **WB, ICC, IHC**

Mutations in Parkinsonism-linked endocytic proteins synaptojanin1 and auxilin have synergistic effects on dopaminergic axonal pathology.
Ng XY, Wu Y, Lin Y, Yaqoob SM, Greene LE, De Camilli P, Cao M
NPJ Parkinson's disease (2023) 91: 26. . **WB, IHC; tested species: mouse**

A new method for isolation and purification of fusion-competent inhibitory synaptic vesicles.
Gopal N, Leitz J, Wang C, Esquivies L, Pfuetzner RA, Brunger AT
Current research in physiology (2024) 7: 100121. . **WB; tested species: mouse**

Distinct synaptic vesicle recycling in inhibitory nerve terminals is coordinated by SV2A.
Bae JR, Lee W, Jo YO, Han S, Koh S, Song WK, Kim SH
Progress in neurobiology (2020) : 101879. . **ICC; tested species: rat**

Mechanism and effects of pulsatile GABA secretion from cytosolic pools in the human beta cell.
Menegaz D, Hagan DW, Almaça J, Cianciaruso C, Rodriguez-Diaz R, Molina J, Dolan RM, Becker MW, Schwalie PC, Nano R, Lebreton F, et al.
Nature metabolism (2019) 111: 1110-1126. . **ICC; tested species: rat**

Expression of SV2 isoforms during rodent brain development.
Crèvecœur J, Foerch P, Doupagne M, Thielen C, Vandenplas C, Moonen G, Deprez M, Rogister B
BMC neuroscience (2013) 14: 87. . **IHC**

Tetanus toxin and botulinum toxin a utilize unique mechanisms to enter neurons of the central nervous system.
Blum FC, Chen C, Kroken AR, Barbieri JT
Infection and immunity (2012) 805: 1662-9. . **WB**

Botulinum neurotoxins C, E and F bind gangliosides via a conserved binding site prior to stimulation-dependent uptake with botulinum neurotoxin F utilising the three isoforms of SV2 as second receptor.
Rummel A, Häfner K, Mahrhold S, Darashchonak N, Holt M, Jahn R, Beermann S, Karnath T, Bigalke H, Binz T
Journal of neurochemistry (2009) 1106: 1942-54. . **WB; tested species: mouse**

Selected General References

SV2 modulates the size of the readily releasable pool of secretory vesicles.
Xu T, Bajjalieh SM
Nature cell biology (2001) 38: 691-8. .

Genetics of synaptic vesicle function: toward the complete functional anatomy of an organelle.
Fernández-Chacón R, Südhof TC
Annual review of physiology (1999) 61: 753-76. .

Access the online factsheet including applicable protocols at https://sysy.com/product/119202 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.