SYSY Antibodies

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Synaptotagmin2 cytoplasmic domain

Cat.No. 105 123; 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 (AP staining) **IP**: yes **ICC**: yes **IHC**: not tested yet **IHC-P**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 406 to 422 from rat Synaptotagmin2 (UniProt Id: P29101)
Reactivity	Reacts with: human (Q8N9I0), rat (P29101), mouse (P46097). Other species not tested yet.
Matching control	105-12P

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

Background

Synaptotagmin2 is an integral membrane glycoprotein of neuronal synaptic vesicles. It is very similar to synaptotagmin1 but shows a partly complementary expression pattern in the CNS. Synaptotagmin2 lacks a CAMK II/PKC phosphorylation site which is present in synaptotagmin1.
Recently synaptotagmin2 has been shown to be an alternative Ca^{2+} sensor for fast secretion.

Selected References for 105 123

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**

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. . **ICC; tested species: rat**

Proteomic analysis of wild-type and mutant huntingtin-associated proteins in mouse brains identifies unique interactions and involvement in protein synthesis.
Culver BP, Savas JN, Park SK, Choi JH, Zheng S, Zeitlin SO, Yates JR, Tanese N
The Journal of biological chemistry (2012) 28726: 21599-614. . **WB**

Synaptotagmin IV determines the linear Ca2+ dependence of vesicle fusion at auditory ribbon synapses.
Johnson SL, Franz C, Kuhn S, Furness DN, Rüttiger L, Münkner S, Rivolta MN, Seward EP, Herschman HR, Engel J, Knipper M, et al.
Nature neuroscience (2010) 131: 45-52. . **IHC**

SV2B defines a subpopulation of synaptic vesicles.
Paulussen I, Beckert H, Musial TF, Gschossmann LJ, Wolf J, Schmitt M, Clasadonte J, Mairet-Coello G, Wolff C, Schoch S, Dietrich D, et al.
Journal of molecular cell biology (2023) : . . **WB; tested species: mouse**

Calcium is Reduced in Presynaptic Mitochondria of Motor Nerve Terminals during Neurotransmission in SMA Mice.
Lopez-Manzaneda M, Franco-Espin J, Tejero R, Cano R, Tabares L
Human molecular genetics (2021) : . . **IHC; tested species: mouse**

A High-Resolution Method for Quantitative Molecular Analysis of Functionally Characterized Individual Synapses.
Holderith N, Heredi J, Kis V, Nusser Z
Cell reports (2020) 324: 107968. . **IHC; tested species: rat**

Paroxysmal and cognitive phenotypes in Prrt2 mutant mice.
Robertson L, Featherby T, Howell S, Hughes J, Thomas P
Genes, brain, and behavior (2019) : e12566. . **WB; tested species: mouse**

Engineered botulinum neurotoxin B with improved binding to human receptors has enhanced efficacy in preclinical models.
Elliott M, Favre-Guilmard C, Liu SM, Maignel J, Masuyer G, Beard M, Boone C, Carré D, Kalinichev M, Lezmi S, Mir I, et al.
Science advances (2019) 51: eaau7196. . **WB; tested species: mouse**

Loss of β2-laminin alters calcium sensitivity and voltage-gated calcium channel maturation of neurotransmission at the neuromuscular junction.
Chand KK, Lee KM, Schenning MP, Lavidis NA, Noakes PG
The Journal of physiology (2015) 5931: 245-65. . **IHC**

Human Induced Pluripotent Stem Cell Derived Neuronal Cells Cultured on Chemically-Defined Hydrogels for Sensitive In Vitro Detection of Botulinum Neurotoxin.
Pellett S, Schwartz MP, Tepp WH, Josephson R, Scherf JM, Pier CL, Thomson JA, Murphy WL, Johnson EA
Scientific reports (2015) 5: 14566. . **ICC**

Access the online factsheet including applicable protocols at https://sysy.com/product/105123 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.