SYSY Antibodies

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Synaptotagmin7

Cat.No. 105 173; 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**: not tested yet **ICC**: 1 : 500 **IHC**: 1 : 500 **IHC-P**: not tested yet
Immunogen	Recombinant protein corresponding to AA 46 to 133 from rat Synaptotagmin7 (UniProt Id: Q62747)
Reactivity	Reacts with: human (O43581), rat (Q62747), mouse (Q9R0N7). Other species not tested yet.
Specificity	Recognizes synaptotagmin 7 (45 kDa) and splice variants C, D, E. K.O. validated PubMed: 26738595
Matching control	105-71P
Remarks	**ICC**: Methanol fixation is recommended.

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

Background

Synaptotagmin7 is a proposed regulator of Ca^{2+} dependent exocytosis like neurotransmitter release. It occurs in several splicing variants which are expressed in a developmentally regulated pattern in brain. The distinct roles for the alternative splicing isoforms have not yet been determined. Synaptotagmin7 shows Ca^{2+} dependent oligomerization via its own C2 domains leading to the formation of large linear structures which reside at the fusion site of vesicles and plasma membrane. These oligomers may be involved in the modulation of Ca^{2+} dependent exocytosis by opening or dilating fusion pores.

Selected References for 105 173

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**

Non-canonical function of ADAM10 in presynaptic plasticity.
Bär J, Fanutza T, Reimann CC, Seipold L, Grohe M, Bolter JR, Delfs F, Bucher M, Gee CE, Schweizer M, Saftig P, et al.
Cellular and molecular life sciences : CMLS (2024) 811: 342. . **WB, ICC; tested species: mouse**

Synaptotagmins 1 and 7 in vesicle release from rods of mouse retina.
Mesnard CS, Hays CL, Barta CL, Sladek AL, Grassmeyer JJ, Hinz KK, Quadros RM, Gurumurthy CB, Thoreson WB
Experimental eye research (2022) 225: 109279. . **WB, IHC; KO verified; tested species: mouse**

Synaptotagmins 1 and 7 play complementary roles in somatodendritic dopamine release.
Hikima T, Witkovsky P, Khatri L, Chao M, Rice ME
The Journal of neuroscience : the official journal of the Society for Neuroscience (2022) : . . **WB, IHC; KO verified; tested species: mouse**

Synaptotagmin 7 is targeted to the axonal plasma membrane through γ-secretase processing to promote synaptic vesicle docking in mouse hippocampal neurons.
Vevea JD, Kusick GF, Courtney KC, Chen E, Watanabe S, Chapman ER
eLife (2021) 10: . . **WB, ICC; KO verified; tested species: mouse**

Synaptotagmin-7 places dense-core vesicles at the cell membrane to promote Munc13-2- and Ca2+-dependent priming.
Tawfik B, Martins JS, Houy S, Imig C, Pinheiro PS, Wojcik SM, Brose N, Cooper BH, Sørensen JB
eLife (2021) 10: . . **WB, ICC; KO verified; tested species: mouse**

Synaptotagmin-7-mediated activation of spontaneous NMDAR currents is disrupted in bipolar disorder susceptibility variants.
Wang QW, Wang YH, Wang B, Chen Y, Lu SY, Yao J
PLoS biology (2021) 197: e3001323. . **WB, ICC; KO verified; tested species: mouse**

Synaptotagmin 1 oligomers clamp and regulate different modes of neurotransmitter release.
Tagliatti E, Bello OD, Mendonça PRF, Kotzadimitriou D, Nicholson E, Coleman J, Timofeeva Y, Rothman JE, Krishnakumar SS, Volynski KE
Proceedings of the National Academy of Sciences of the United States of America (2020) : . . **WB, ICC; KD verified; tested species: mouse**

Endophilin-A coordinates priming and fusion of neurosecretory vesicles via intersectin.
Gowrisankaran S, Houy S, Del Castillo JGP, Steubler V, Gelker M, Kroll J, Pinheiro PS, Schwitters D, Halbsgut N, Pechstein A, van Weering JRT, et al.
Nature communications (2020) 111: 1266. . **WB, ICC; tested species: mouse**

Synaptotagmin-7 enhances calcium-sensing of chromaffin cell granules and slows discharge of granule cargos.
Bendahmane M, Chapman-Morales A, Kreutzberger AJB, Schenk NA, Mohan R, Bakshi S, Philippe J, Zhang S, Kiessling V, Tamm LK, Giovannucci DR, et al.
Journal of neurochemistry (2020) : e14986. . **WB, ICC; KO verified; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/105173 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.