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 (see remarks) **IHC**: 1 : 500 **IHC-P (FFPE)**: 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.

For more information on protein expression pattern, please refer to the overview image in our SYSY Antibodies ATLAS.

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 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 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-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-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**

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**

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 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.