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

Tomosyn1

Cat.No. 183 103; 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**: external data (see remarks) **ICC**: 1 : 500 **IHC**: external data (see remarks) **IHC-P (FFPE)**: 1 : 500
Immunogen	Recombinant protein corresponding to AA 561 to 774 from mouse Tomosyn1 (UniProt Id: Q8K400)
Reactivity	Reacts with: rat (Q9WU70), mouse (Q8K400). Other species not tested yet.
Specificity	K.O. validated PubMed: 24744148
Remarks	**IP**: This antibody has been successfully applied and published for this method by customers (see application-specific references). It has not been validated using our standard protocols. **IHC**: This antibody has been successfully applied for this method by our customers using mild fixation (4% PFA and 15% picric acid) according to Kirizs et al. 2014 (see gallery). It has not been validated using our standard protocol.

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

Background

SNARE proteins play crucial roles in vesicle transport by catalyzing membrane fusion events. Several proteins like the Munc 18s and **tomosyn 1** (syntaxin 1A binding protein 5) interact with the neuronal plasmalemma located SNARE protein syntaxin 1a and modulate neurotransmitter release at synaptic nerve terminals.
Tomosyn 1 contains a C-terminal synaptobrevin-like R-SNARE motif that can form a stable ternary complex with syntaxin 1A and SNAP 25.
Another isoform, **tomosyn 2** (syntaxin 1A binding protein 5 like), has also been described.

Selected References for 183 103

Tomosyn-2 is required for normal motor performance in mice and sustains neurotransmission at motor endplates.
Geerts CJ, Plomp JJ, Koopmans B, Loos M, van der Pijl EM, van der Valk MA, Verhage M, Groffen AJ
Brain structure & function (2015) 2204: 1971-82. . **WB; KO verified**

Tomosyn regulates the small RhoA GTPase to control the dendritic stability of neurons and the surface expression of AMPA receptors.
Shen W, Kilander MBC, Bridi MS, Frei JA, Niescier RF, Huang S, Lin YC
Journal of neuroscience research (2020) : . . **WB, IP, ICC; tested species: mouse**

Tomosyn associates with secretory vesicles in neurons through its N- and C-terminal domains.
Geerts CJ, Mancini R, Chen N, Koopmans FTW, Li KW, Smit AB, van Weering JRT, Verhage M, Groffen AJA
PloS one (2017) 127: e0180912. . **IP, ICC, EM; KO verified; tested species: mouse**

The ubiquitin-proteasome system functionally links neuronal Tomosyn-1 to dendritic morphology.
Saldate JJ, Shiau J, Cazares VA, Stuenkel EL
The Journal of biological chemistry (2018) 2937: 2232-2246. . **WB, IP, ICC; KD verified; tested species: rat**

Genetic ablation of synaptotagmin-9 alters tomosyn-1 function to increase insulin secretion from pancreatic β-cells improving glucose clearance.
Rahman MM, Pathak A, Schueler KL, Alsharif H, Michl A, Alexander J, Kim JA, Bhatnagar S
FASEB journal : official publication of the Federation of American Societies for Experimental Biology (2023) 378: e23075. . **WB, ICC; tested species: mouse**

Tomosyn affects dense core vesicle composition but not exocytosis in mammalian neurons.
Subkhangulova A, Gonzalez-Lozano MA, Groffen AJA, van Weering JRT, Smit AB, Toonen RF, Verhage M
eLife (2023) 12: . . **WB, ICC; KO verified; tested species: mouse**

Dynamic Partitioning of Synaptic Vesicle Pools by the SNARE-Binding Protein Tomosyn.
Cazares VA, Njus MM, Manly A, Saldate JJ, Subramani A, Ben-Simon Y, Sutton MA, Ashery U, Stuenkel EL
The Journal of neuroscience : the official journal of the Society for Neuroscience (2016) 3644: 11208-11222. . **WB, ICC; KD verified; tested species: rat**

Mapping localization of 21 endogenous proteins in the Golgi apparatus of rodent neurons.
van Bommel DM, Toonen RF, Verhage M
Scientific reports (2023) 131: 2871. . **ICC; tested species: mouse**

Actions of Rab27B-GTPase on mammalian central excitatory synaptic transmission.
Arias-Hervert ER, Xu N, Njus M, Murphy GG, Hou Y, Williams JA, Lentz SI, Ernst SA, Stuenkel EL
Physiological reports (2020) 89: e14428. . **WB; tested species: mouse**

Selected General References

Tomosyn negatively regulates CAPS-dependent peptide release at Caenorhabditis elegans synapses.
Gracheva EO et al. J. Neurosci. (2007) PubMed:17881523

Access the online factsheet including applicable protocols at https://sysy.com/product/183103 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.