SYSY Antibodies

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Tomosyn2

Cat.No. 183 203; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was 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**: not tested yet **IHC**: not tested yet **IHC_P**: not tested yet
Immunogen	Recombinant protein corresponding to AA 828 to 983 from mouse Tomosyn2 (UniProt Id: Q5DQR4)
Reactivity	Reacts with: rat, mouse (Q5DQR4). Other species not tested yet.
Specificity	K.O. PubMed: 24744148

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 183 203

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

Selected General References

Tomosyn negatively regulates CAPS-dependent peptide release at Caenorhabditis elegans synapses.
Gracheva EO, Burdina AO, Touroutine D, Berthelot-Grosjean M, Parekh H, Richmond JE
The Journal of neuroscience : the official journal of the Society for Neuroscience (2007) 2738: 10176-84. .

Two distinct genes drive expression of seven tomosyn isoforms in the mammalian brain, sharing a conserved structure with a unique variable domain.
Groffen AJ, Jacobsen L, Schut D, Verhage M
Journal of neurochemistry (2005) 923: 554-68. .

Structural basis for the inhibitory role of tomosyn in exocytosis.
Pobbati AV, Razeto A, Böddener M, Becker S, Fasshauer D
The Journal of biological chemistry (2004) 27945: 47192-200. .

Tomosyn inhibits priming of large dense-core vesicles in a calcium-dependent manner.
Yizhar O, Matti U, Melamed R, Hagalili Y, Bruns D, Rettig J, Ashery U
Proceedings of the National Academy of Sciences of the United States of America (2004) 1018: 2578-83. .

Tomosyn: a syntaxin-1-binding protein that forms a novel complex in the neurotransmitter release process.
Fujita Y, Shirataki H, Sakisaka T, Asakura T, Ohya T, Kotani H, Yokoyama S, Nishioka H, Matsuura Y, Mizoguchi A, Scheller RH, et al.
Neuron (1998) 205: 905-15. .

Access the online factsheet including applicable protocols at https://sysy.com/product/183203 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.