

Synaptotagmin11

Cat.No. 270 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

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| 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 ₂ O 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 IP: not tested yet ICC: 1 : 500 IHC: not tested yet IHC-P: not tested yet |
| Immunogen | Recombinant protein corresponding to AA 70 to 154 from mouse Synaptotagmin11 (UniProt Id: Q9R0N3) |
| Reactivity | Reacts with: rat (O08835), mouse (Q9R0N3). Other species not tested yet. |
| Specificity | K.D. validated PubMed: 28686317 |
| Matching control | 270-0P |

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

Background

Up to now at least 17 synaptotagmins have been identified. **Synaptotagmin11**, a close relative of synaptotagmin4, is mainly expressed in the brain. It is composed of a vesicular, a transmembrane and two C2 domains. Only the C2B domain is able to bind calcium. In the C2A domain one of the calcium binding aspartates has been substituted for serine leading to a loss of its binding capabilities. Synaptotagmin11 has been shown to localize mainly to excitatory and inhibitory presynaptic terminals.

Selected References for 270 003

Injured astrocytes are repaired by Synaptotagmin XI-regulated lysosome exocytosis. Sreetama SC, Takano T, Nedergaard M, Simon SM, Jaiswal JK Cell death and differentiation (2016) 234: 596-607. . **WB, ICC; tested species: mouse**

Synaptotagmin-11 deficiency mediates schizophrenia-like behaviors in mice via dopamine over-transmission. Chen Y, Gu Y, Wang B, Wei A, Dong N, Jiang Y, Liu X, Zhu L, Zhu F, Tan T, Jing Z, et al. Nature communications (2024) 151: 10571. . **IHC, WB; KO verified; tested species: mouse,human**

Synaptotagmin-11 facilitates assembly of a presynaptic signaling complex in post-Golgi cargo vesicles. Trovò L, Kouvaros S, Schwenk J, Fernandez-Fernandez D, Fritzius T, Rem PD, Früh S, Gassmann M, Fakler B, Bischofberger J, Bettler B, et al. EMBO reports (2024) : . . **WB, ICC; tested species: mouse,human**

A novel method for culturing stellate astrocytes reveals spatially distinct Ca²⁺ signaling and vesicle recycling in astrocytic processes. Wolfes AC, Ahmed S, Awasthi A, Stahlberg MA, Rajput A, Magruder DS, Bonn S, Dean C The Journal of general physiology (2017) 1491: 149-170. . **ICC, WB**

Mutations in Parkinsonism-linked endocytic proteins synaptotagmin1 and auxilin have synergistic effects on dopaminergic axonal pathology. Ng XY, Wu Y, Lin Y, Yaqoob SM, Greene LE, De Camilli P, Cao M NPJ Parkinson's disease (2023) 91: 26. . **WB; tested species: mouse**

Synaptotagmin-11 inhibits cytokine secretion and phagocytosis in microglia. Du C, Wang Y, Zhang F, Yan S, Guan Y, Gong X, Zhang T, Cui X, Wang X, Zhang CX Glia (2017) 6510: 1656-1667. . **WB; KD verified; tested species: mouse**

Activity-dependent formation of a vesicular inhibitory amino acid transporter gradient in the superior olivary complex of NMRI mice. Ebbers L, Weber M, Nothwang HG BMC neuroscience (2017) 181: 75. . **IHC; tested species: mouse**

Selected General References

Developmental expression and subcellular distribution of synaptotagmin 11 in rat hippocampus. Yeo H et al. Neuroscience (2012) PubMed:22960622

Differential mRNA expression patterns of the synaptotagmin gene family in the rodent brain. Mittelsteadt T et al. J. Comp. Neurol. (2009) PubMed:19030179

Synaptotagmin XI as a candidate gene for susceptibility to schizophrenia. Inoue S et al. Am. J. Med. Genet. B Neuropsychiatr. Genet. (2007) PubMed:17192956

Screening for mutations in synaptotagmin XI in Parkinson's disease. Glass AS et al. J. Neural Transm. Suppl. (2004) PubMed:15354386

Access the online factsheet including applicable protocols at <https://sysy.com/product/270003> 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.