

Synaptogyrin 1

Cat.No. 103 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/Storage	200 µl antiserum, lyophilized. For reconstitution add 200 µl H ₂ O, then aliquot and store at -20°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 up to 1 : 5000 (AP staining) IP: yes ICC: 1 : 100 up to 1 : 500 IHC: 1 : 200 IHC-P: 1 : 500 ELISA: yes (see remarks)
Immunogen	Synthetic peptide corresponding to AA 220 to 234 from rat Synaptogyrin 1 (UniProt Id: Q62876)
Reactivity	Reacts with: human (O43759), rat (Q62876), mouse (O55100), hamster, chicken. No signal: zebrafish. Other species not tested yet.
Specificity	K.O. validated PubMed: 31090538
Matching control	103-0P
Remarks	ELISA: Suitable as detector antibody for sandwich-ELISA with cat. no. 103 011 as capture antibody. The ELISA-protocol for membrane proteins is recommended.

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

Background

Synaptogyrins are tyrosine-phosphorylated proteins with two neuronal (**synaptogyrin 1** and **3**) and one ubiquitous, synaptogyrin 2 or cellugyrin isoform.

Synaptogyrins are integral membrane proteins and localize to the membrane of small vesicles.

Synaptogyrin 1 and 3 are expressed in the brain whereby the latter shows a more restricted expression pattern with high levels in the mossy fiber region of the hippocampus, substantia nigra pars reticulata, pallidum, and deep cerebellar nuclei.

Synaptogyrin 2/cellugyrin, a close relative, is expressed in all tissues, for instance, in distinct populations of GLUT 4 containing vesicles.

Selected References for 103 002

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. . **ICC, IHC; tested species: mouse, rat**

Distribution of synaptic vesicle proteins in the mammalian retina identifies obligatory and facultative components of ribbon synapses.

Von Kriegstein K, Schmitz F, Link E, Südhof TC

The European journal of neuroscience (1999) 114: 1335-48. . **WB**

Mitofusin 2 Sustains the Axonal Mitochondrial Network to Support Presynaptic Ca²⁺ Homeostasis and the Synaptic Vesicle Cycle in Rat Hippocampal Axons.

Vevea JD, Chapman ER

The Journal of neuroscience : the official journal of the Society for Neuroscience (2023) 4319: 3421-3438. . **WB; tested species: rat**

Autophagy enables microglia to engage amyloid plaques and prevents microglial senescence.

Choi I, Wang M, Yoo S, Xu P, Seegobin SP, Li X, Han X, Wang Q, Peng J, Zhang B, Yue Z, et al.

Nature cell biology (2023) 257: 963-974. . **WB; tested species: mouse**

Lysosomal exocytosis releases pathogenic α-synuclein species from neurons in synucleinopathy models.

Xie YX, Naseri NN, Fels J, Kharel P, Na Y, Lane D, Burré J, Sharma M

Nature communications (2022) 131: 4918. . **WB; tested species: mouse**

Lowering Synaptogyrin-3 expression rescues Tau-induced memory defects and synaptic loss in the presence of microglial activation.

Largo-Barrientos P, Apóstolo N, Creemers E, Callaerts-Vegh Z, Swerts J, Davies C, McInnes J, Wierda K, De Strooper B, Spiers-Jones T, de Wit J, et al.

Neuron (2021) : . . **IHC; tested species: mouse**

Acute disruption of the synaptic vesicle membrane protein synaptotagmin 1 using knockoff in mouse hippocampal neurons.

Vevea JD, Chapman ER

eLife (2020) 9: . . **WB; tested species: mouse**

Synaptic Vesicle Precursors and Lysosomes Are Transported by Different Mechanisms in the Axon of Mammalian Neurons.

De Pace R, Britt DJ, Mercurio J, Foster AM, Djavaherian L, Hoffmann V, Abebe D, Bonifacino JS

Cell reports (2020) 3111: 107775. . **WB; tested species: mouse**

Elevated synaptic vesicle release probability in synaptophysin/gyrin family quadruple knockouts.

Raja MK, Preobraschenski J, Del Olmo-Cabrera S, Martinez-Turrillas R, Jahn R, Perez-Otano I, Wesseling JF

eLife (2019) 8: . . **WB; KO verified; tested species: mouse**

SV31 is a Zn²⁺-binding synaptic vesicle protein.

Barth J, Zimmermann H, Volkandt W

Journal of neurochemistry (2011) 1184: 558-70. . **WB**

Access the online factsheet including applicable protocols at <https://sysy.com/product/103002> 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.