

Gephyrin

Cat.No. 147 011C3; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized, fluorescence-labeled with Oyster 550. Albumin was added for stabilization. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in PBS. Either add 1:1 (v/v) glycerol, then aliquot and store at -20°C until use, or store aliquots at -80°C without additives. Reconstitute immediately upon receipt! Avoid bright light when working with the antibody to minimize photo bleaching of the fluorescent dye. The mounting agent Aquatex® (Merck Chemicals) is not compatible with Oyster dyes! For detailed information, see back of the data sheet.
Applications	WB: N/A IP: N/A ICC: 1 : 250 up to 1 : 500 IHC: not tested yet IHC_P: not recommended
Label	Oyster 550
Clone	mAb7a
Subtype	IgG1 (κ light chain)
Immunogen	Nativ Protein corresponding to AA 1 to 768 from rat Gephyrin (UniProt Id: Q03555)
Epitop	Epitop: AA 264 to 276 from rat Gephyrin (UniProt Id: Q03555)
Reactivity	Reacts with: human (Q9NQX3), rat (Q03555), mouse (Q8BUV3), pig, goldfish, zebrafish. Other species not tested yet.
Specificity	Specific for the brain specific 93 kDa splice variant phosphorylated at Ser-270. K.O.

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

Background

Gephyrin is a bifunctional protein which is essential for both synaptic clustering of inhibitory neurotransmitter receptors in the central nervous system and the biosynthesis of the molybdenum cofactor (MoCo) in peripheral tissues. It co-purifies with the inhibitory glycine receptor (GlyR) and is expressed abundantly in all brain areas which contain synapses.

Selected References for 147 011C3

- Cadherin-10 Maintains Excitatory/Inhibitory Ratio through Interactions with Synaptic Proteins.
Smith KR, Jones KA, Kopeikina KJ, Burette AC, Copits BA, Yoon S, Forrest MP, Fawcett-Patel JM, Hanley JG, Weinberg RJ, Swanson GT, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2017) 3746: 11127-11139. . **ICC; tested species: rat**
- Gephyrin clusters are absent from small diameter primary afferent terminals despite the presence of GABA(A) receptors.
Lorenzo LE, Godin AG, Wang F, St-Louis M, Carbonetto S, Wiseman PW, Ribeiro-da-Silva A, De Koninck Y
The Journal of neuroscience : the official journal of the Society for Neuroscience (2014) 3424: 8300-17. . **IHC; tested species: rat**
- GABAA and Glycine Receptor-Mediated Inhibitory Synaptic Transmission onto Adult Rat Lamina Ili PKCγ-Interneurons: Pharmacological but Not Anatomical Specialization.
El Khoueiry C, Alba-Delgado C, Antri M, Gutierrez-Mecinas M, Todd AJ, Artola A, Dallel R
Cells (2022) 118: . . **IHC; tested species: rat**
- ATG4D is the main ATG8 delipidating enzyme in mammalian cells and protects against cerebellar neurodegeneration.
Tamargo-Gómez I, Martínez-García GG, Suárez MF, Rey V, Fueyo A, Codina-Martínez H, Bretones G, Caravia XM, Morel E, Dupont N, Cabo R, et al.
Cell death and differentiation (2021) 289: 2651-2672. . **IHC; tested species: mouse**
- Gephyrin-Lacking PV Synapses on Neocortical Pyramidal Neurons.
Kuljis DA, Micheva KD, Ray A, Wegner W, Bowman R, Madison DV, Willig KI, Barth AL
International journal of molecular sciences (2021) 2218: . . **IHC; tested species: mouse**
- Enhancing neuronal chloride extrusion rescues α2/α3 GABAA-mediated analgesia in neuropathic pain.
Lorenzo LE, Godin AG, Ferrini F, Bachand K, Plasencia-Fernandez I, Labrecque S, Girard AA, Boudreau D, Kianicka I, Gagnon M, Doyon N, et al.
Nature communications (2020) 111: 869. . **IHC; tested species: rat**
- The role of calcitonin-expressing granule cells in olfactory bulb functions and odor behavior.
Hardy D, Malvaut S, Breton-Provencher V, Saghatelian A
Scientific reports (2018) 81: 9385. . **IHC; tested species: mouse**
- α5GABAA Receptors Mediate Tonic Inhibition in the Spinal Cord Dorsal Horn and Contribute to the Resolution Of Hyperalgesia.
Perez-Sanchez J, Lorenzo LE, Lecker I, Zurek AA, Labrakakis C, Bridgwater EM, Orser BA, De Koninck Y, Bonin RP
Journal of neuroscience research (2017) 956: 1307-1318. . **IHC; tested species: mouse**

Selected General References

- Identification of multiple gephyrin variants in different organs of the adult rat.
Hermann A, Kneussel M, Betz H
Biochemical and biophysical research communications (2001) 2821: 67-70. .
- Widespread expression of gephyrin, a putative glycine receptor-tubulin linker protein, in rat brain.
Kirsch J, Betz H
Brain research (1993) 6212: 301-10. .

Access the online factsheet including applicable protocols at <https://sysy.com/product/147011C3> 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 at 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.