

## Glycine receptor $\alpha$ 1

Cat.No. 146 111; Monoclonal mouse antibody, 100  $\mu$ g purified IgG (lyophilized)

### Data Sheet

Reconstitution/ Storage	100 $\mu$ g purified IgG, lyophilized. Albumin and azide were added for stabilization. For <b>reconstitution</b> add 100 $\mu$ l H <sub>2</sub> O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use. For detailed information, see back of the data sheet.
Applications	<b>WB:</b> not recommended <b>IP:</b> yes <b>ICC:</b> 1 : 500 <b>IHC:</b> 1 : 500 (see remarks) <b>IHC-P/FFPE:</b> not recommended <b>EM:</b> yes <b>FLOWCYTOMETRY:</b> yes
Clone	mAb2b
Subtype	IgG1 ( $\kappa$ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 457 from rat Glycine receptor $\alpha$ 1 (UniProt Id: P07727)
Epitop	Epitop: AA 29 to 39 from rat Glycine receptor $\alpha$ 1 (UniProt Id: P07727)
Reactivity	Reacts with: human (P23415), rat (P07727), mouse (Q64018), pig, monkey. Other species not tested yet.
Specificity	Specific for the glycine receptor $\alpha$ 1-subunit.
Remarks	<b>IHC:</b> To improve signal strength antigen retrieval (10mM citrate, pH 6.0, overnight at 60°C) is highly recommended.

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

Access the online factsheet including applicable protocols at <https://susy.com/product/146111> or scan the QR-code.



### Background

The inhibitory **glycine receptor** (GlyR) is a member of the ligand-gated ion channel superfamily of neurotransmitter receptors. It is an oligomeric protein composed of homologous subunits ( $\alpha$  1-4 and  $\beta$ ) with four transmembrane segments (M1-M4) each. It shows a widespread expression profile in brain. Several isoforms and splice variants with distinct pharmacology have been discovered so far.

### Selected References for 146 111

- Differential distribution of glycine receptor subtypes at the rat calyx of Held synapse.  
Hruskova B, Trojanova J, Kulik A, Kralikova M, Pysanenko K, Bures Z, Syka J, Trussell LO, Turecek R  
The Journal of neuroscience : the official journal of the Society for Neuroscience (2012) 3247: 17012-24. . **IHC, EM**
- Changes in neuronal excitability and synaptic transmission in nucleus accumbens in a transgenic Alzheimer's disease mouse model.  
Fernández-Pérez EJ, Gallegos S, Armijo-Weingart L, Araya A, Riffo-Lepe NO, Cayuman F, Aguayo LG  
Scientific reports (2020) 101: 19606. . **WB, IHC; tested species: mouse**
- Glycine Receptor Autoantibodies Impair Receptor Function and Induce Motor Dysfunction.  
Rauschenberger V, von Wardenburg N, Schaefer N, Ogino K, Hirata H, Lillesaar C, Kluck CJ, Meinck HM, Borrmann M, Weishaupt A, Doppler K, et al.  
Annals of neurology (2020) 883: 544-561. . **ICC, UPTAKE; tested species: human**
- A novel glycine receptor variant with startle disease affects syndapin I and glycinergic inhibition.  
Langlhofer G, Schaefer N, Maric HM, Keramidas A, Zhang Y, Baumann P, Blum R, Breitinger U, Strømgaard K, Schlosser A, Kessels MM, et al.  
The Journal of neuroscience : the official journal of the Society for Neuroscience (2020) : . . **IP, ICC; tested species: human, mouse**
- Quantitative nanoscopy of inhibitory synapses: counting gephyrin molecules and receptor binding sites.  
Specht CG, Izeddin I, Rodriguez PC, El Beheiry M, Rostaing P, Darzacq X, Dahan M, Triller A  
Neuron (2013) 792: 308-21. . **ICC, IHC; tested species: mouse**
- Organization and emergence of a mixed GABA-glycine retinal circuit that provides inhibition to mouse ON-sustained alpha retinal ganglion cells.  
Sawant A, Ebbinghaus BN, Bleckert A, Gamlin C, Yu WQ, Berson D, Rudolph U, Sinha R, Hoon M  
Cell reports (2021) 3411: 108858. . **ICC; tested species: mouse**
- Systemic delivery of human GlyR IgG antibody induces GlyR internalization into motor neurons of brainstem and spinal cord with motor dysfunction in mice.  
Carvajal-González A, Jacobson L, Clover L, Wickremaratchi M, Shields S, Lang B, Vincent A  
Neuropathology and applied neurobiology (2020) : . . **IHC; tested species: mouse**
- Enhancing neuronal chloride extrusion rescues  $\alpha$ 2/ $\alpha$ 3 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**
- Distinct Developmental Mechanisms Act Independently to Shape Biased Synaptic Divergence from an Inhibitory Neuron.  
Gamlin CR, Zhang C, Dyer MA, Wong ROL  
Current biology : CB (2020) : . . **IHC; tested species: mouse**
- Glycine receptor is differentially expressed in the rat retina at early stages of streptozotocin-induced diabetes.  
Morales-Calixto E, Velázquez-Flores MÁ, Sánchez-Chávez G, Ruiz Esparza-Garrido R, Salceda R  
Neuroscience letters (2019) 712: 134506. . **WB; tested species: rat**
- Cochlear ablation in neonatal rats disrupts inhibitory transmission in the medial nucleus of the trapezoid body.  
Hruskova B, Trojanova J, Kralikova M, Melichar A, Suchankova S, Bartosova J, Burianova JS, Popelar J, Syka J, Turecek R  
Neuroscience letters (2019) : . . **IHC; tested species: rat**
- Elucidating the Molecular Basis for Inhibitory Neurotransmission Regulation by Artemisininins.  
Kasaragod VB, Hausrat TJ, Schaefer N, Kuhn M, Christensen NR, Tessmer I, Maric HM, Madsen KL, Sotriffer C, Villmann C, Kneussel M, et al.  
Neuron (2019) 1014: 673-689.e11. . **UPTAKE; tested species: human**
- 3D Electrophysiological Measurements on Cells Embedded within Fiber-Reinforced Matrigel.  
Schaefer N, Janzen D, Bakirci E, Hrynevich A, Dalton PD, Villmann C  
Advanced healthcare materials (2019) : e1801226. . **ICC; tested species: mouse**

# 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 10 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 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.