SYSY Antibodies

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Glycine receptor α1

Cat.No. 146 111; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For **reconstitution** add 100 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**: not recommended **IP**: yes **ICC**: 1 : 500 **IHC**: 1 : 500 **IHC-P**: not recommended **EM**: yes **FACS**: yes
Clone	mAb2b
Subtype	IgG1 (κ light chain)
Immunogen	Nativ Protein corresponding to AA 1 to 457 from rat Glycine receptor α1 (UniProt Id: P07727)
Epitop	AA 29 to 39 from rat Glycine receptor α1 (UniProt Id: P07727)
Reactivity	Reacts with: human (P23415), rat (P07727), mouse (Q64018), pig, monkey. Other species not tested yet.
Remarks	**IHC**: Antigen retrieval with citrate buffer pH 6 is required.

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

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 (α 1-4 and β) 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

A proline-rich motif in the large intracellular loop of the glycine receptor α1 subunit interacts with the Pleckstrin homology domain of collybistin.
Breitinger U, Weinländer K, Pechmann Y, Langlhofer G, Enz R, Becker CM, Sticht H, Kneussel M, Villmann C, Breitinger HG
Journal of advanced research (2021) 29: 95-106. . **WB, ICC, UPTAKE**

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**

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**

Glycine Receptor β-Targeting Autoantibodies Contribute to the Pathology of Autoimmune Diseases.
Wiessler AL, Talucci I, Piro I, Seefried S, Hörlin V, Baykan BB, Tüzün E, Schaefer N, Maric HM, Sommer C, Villmann C, et al.
Neurology(R) neuroimmunology & neuroinflammation (2024) 112: e200187. . **WB, ICC; tested species: human,mouse**

Role of the Glycine Receptor β Subunit in Synaptic Localization and Pathogenicity in Severe Startle Disease.
Wiessler AL, Hasenmüller AS, Fuhl I, Mille C, Cortes Campo O, Reinhard N, Schenk J, Heinze KG, Schaefer N, Specht CG, Villmann C, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2024) 442: . . **ICC, IHC; tested species: mouse**

Glycine receptor autoantibody binding to the extracellular domain is independent from receptor glycosylation.
Rauschenberger V, Piro I, Kasaragod VB, Hörlin V, Eckes AL, Kluck CJ, Schindelin H, Meinck HM, Wickel J, Geis C, Tüzün E, et al.
Frontiers in molecular neuroscience (2023) 16: 1089101. . **WB, UPTAKE; tested species: human**

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**

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**

Impaired Presynaptic Function Contributes Significantly to the Pathology of Glycine Receptor Autoantibodies.
Wiessler AL, Zheng F, Werner C, Habib M, Tuzun E, Alzheimer C, Sommer C, Villmann C
Neurology(R) neuroimmunology & neuroinflammation (2025) 122: e200364. . **ICC; tested species: mouse**

Glycine is a transmitter in the human and chimpanzee cochlear nuclei.
Baizer JS, Sherwood CC, Hof PR, Baker JF, Witelson SF
Frontiers in neuroanatomy (2024) 18: 1331230. . **IHC; tested species: human**

Access the online factsheet including applicable protocols at https://sysy.com/product/146111 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.