SYSY Antibodies

Rudolf-Wissell-Str. 28a
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: www.sysy.com

GluA2 (AMPA2)

Cat.No. 182 111; 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**: 1 : 1000 (AP staining) **IP**: yes (see remarks) **ICC**: not tested yet **IHC**: not tested yet **IHC-P (FFPE)**: not tested yet **ExM**: external data (see remarks) **Clarity**: external data (see remarks)
Clone	1404A10
Subtype	IgG2b (κ light chain)
Immunogen	Synthetic peptide corresponding to AA 278 to 292 from rat GluA2 (UniProt Id: P19491)
Reactivity	Reacts with: rat (P19491), mouse (P23819), human (P42262). No signal: zebrafish. Other species not tested yet.
Remarks	**IP**: Denaturing IP-protocol is recommended. Protein-protein interactions may be affected. **ExM**: This antibody has been successfully applied and published for this method by customers (see application-specific references). **Clarity**: This antibody has been successfully applied and published for this method by customers (see application-specific references).

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

Background

Ionotropic **glu**tamate **r**eceptors (i**GluR**s) mediate rapid excitatory neurotransmission in the mammalian CNS. They can be subdivided into three major groups, the **AMPA/GluA**, NMDA/GluN and kainate/GluK receptors (KARs). mRNAs coding for glutamate receptors are substrates for an adenosine deaminase acting on RNA (ADAR) that increases the diversity of these proteins. Glutamate receptors of the AMPA subtype are monovalent cation channels and are composed of the four AMPA subunits GluA 1, **GluA 2**, GluA 3, and GluA 4.

For more information on protein expression pattern, please refer to the overview image in our SYSY Antibodies ATLAS.

Selected References for 182 111

Synaptotagmin-3 drives AMPA receptor endocytosis, depression of synapse strength, and forgetting.
Awasthi A, Ramachandran B, Ahmed S, Benito E, Shinoda Y, Nitzan N, Heukamp A, Rannio S, Martens H, Barth J, Burk K, et al.
Science (New York, N.Y.) (2018) : . . **WB, ICC; tested species: rat**

SHANK2 Mutations Result in Dysregulation of the ERK1/2 Pathway in Human Induced Pluripotent Stem Cells-Derived Neurons and Shank2(-/-) Mice.
Lutz AK, Pérez Arévalo A, Ioannidis V, Stirmlinger N, Demestre M, Delorme R, Bourgeron T, Boeckers TM
Frontiers in molecular neuroscience (2021) 14: 773571. . **WB, ICC; tested species: human**

Combined expansion and STED microscopy reveals altered fingerprints of postsynaptic nanostructure across brain regions in ASD-related SHANK3-deficiency.
Delling JP, Bauer HF, Gerlach-Arbeiter S, Schön M, Jacob C, Wagner J, Pedro MT, Knöll B, Boeckers TM
Molecular psychiatry (2024) 2910: 2997-3009. . **EXM; tested species: human,mouse**

Daily Brief Heat Therapy Reduces Seizures in A350V IQSEC2 Mice and Is Associated with Correction of AMPA Receptor-Mediated Synaptic Dysfunction.
Jada R, Borisov V, Laury E, Halpert S, Levy NS, Wagner S, Netser S, Walikonis R, Carmi I, Berlin S, Levy AP, et al.
International journal of molecular sciences (2023) 244: . . **IHC; tested species: mouse**

Computerized EEG in the comparison of oxyprothepin and fluphenazine decanoat.
Misurec J, Náhunek K, Svestka J, Cesková E
Activitas nervosa superior (1979) 213: 140. . **CLARITY; tested species: human**

Synaptophysin density underestimates synapse counts in the human brain - An anatomical study on synaptoporin protein expression.
Woelfle S, Schön M, Pedro MT, Wagner J, Shiban E, Hong B, Tsoy Y, Boeckers TM
Neurobiology of disease (2026) 227: 107503. . **IHC; tested species: human**

INSIHGT: an accessible multi-scale, multi-modal 3D spatial biology platform.
Yau CN, Hung JTS, Campbell RAA, Wong TCY, Huang B, Wong BTY, Chow NKN, Zhang L, Tsoi EPL, Tan Y, Li JJX, et al.
Nature communications (2024) 151: 10888. . **IHC; tested species: mouse**

Expression profiles of the autism-related SHANK proteins in the human brain.
Woelfle S, Pedro MT, Wagner J, Schön M, Boeckers TM
BMC biology (2023) 211: 254. . **CLARITY; tested species: human**

Heterogeneity of Cell Surface Glutamate and GABA Receptor Expression in Shank and CNTN4 Autism Mouse Models.
Heise C, Preuss JM, Schroeder JC, Battaglia CR, Kolibius J, Schmid R, Kreutz MR, Kas MJH, Burbach JPH, Boeckers TM
Frontiers in molecular neuroscience (2018) 11: 212. . **WB; tested species: mouse**

Neuroligin-1 regulates excitatory synaptic transmission, LTP and EPSP-spike coupling in the dentate gyrus in vivo.
Jedlicka P, Vnencak M, Krueger DD, Jungenitz T, Brose N, Schwarzacher SW
Brain structure & function (2015) 2201: 47-58. . **WB**

Access the online factsheet including applicable protocols at https://sysy.com/product/182111 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.