SYSY Antibodies

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GluA3 (AMPA3)

Cat.No. 182 203; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For **reconstitution** add 50 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 **ICC**: not tested yet **IHC**: not tested yet **IHC-P (FFPE)**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 860 to 871 from mouse GluA3 (UniProt Id: Q9Z2W9)
Reactivity	Reacts with: human (P42263), rat (P19492), mouse (Q9Z2W9), pig, cow. No signal: zebrafish. Other species not tested yet.
Matching control	182-2P

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.

Selected References for 182 203

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**

Molecular Characterization of AMPA-Receptor-Containing Vesicles.
Peters JJ, Leitz J, Oses-Prieto JA, Burlingame AL, Brunger AT
Frontiers in molecular neuroscience (2021) 14: 754631. . **EM; tested species: mouse**

Autistic-like behaviours and hyperactivity in mice lacking ProSAP1/Shank2.
Schmeisser MJ, Ey E, Wegener S, Bockmann J, Stempel AV, Kuebler A, Janssen AL, Udvardi PT, Shiban E, Spilker C, Balschun D, et al.
Nature (2012) 4867402: 256-60. . **WB**

High-resolution proteomics unravel architecture and molecular diversity of native AMPA receptor complexes.
Schwenk J, Harmel N, Brechet A, Zolles G, Berkefeld H, Müller CS, Bildl W, Baehrens D, Hüber B, Kulik A, Klöcker N, et al.
Neuron (2012) 744: 621-33. . **IP; tested species: rat**

Schizophrenia-related Xpo7 haploinsufficiency leads to behavioral and nuclear transport pathologies.
Toyoda S, Kikuchi M, Abe Y, Tashiro K, Handa T, Katayama S, Motokawa Y, Tanaka KF, Takahashi H, Shiwaku H
EMBO reports (2025) : . . **WB; tested species: mouse**

Early α-synuclein aggregation decreases corticostriatal glutamate drive and synapse density.
Brzozowski CF, Challa H, Gcwensa NZ, Hall D, Nabert D, Chambers N, Gallardo I, Millet M, Volpicelli-Daley L, Moehle MS
Neurobiology of disease (2025) 210: 106918. . **WB; tested species: mouse**

GSG1L-containing AMPA receptor complexes are defined by their spatiotemporal expression, native interactome and allosteric sites.
Perozzo AM, Schwenk J, Kamalova A, Nakagawa T, Fakler B, Bowie D
Nature communications (2023) 141: 6799. . **IP; tested species: rat**

Chronic mild corticosterone exposure during adolescence enhances behaviors and upregulates neuroplasticity-related proteins in rat hippocampus.
Li J, Li Y, Sun Y, Wang H, Liu X, Zhao Y, Wang H, Su Y, Si T
Progress in neuro-psychopharmacology & biological psychiatry (2019) 89: 400-411. . **WB; tested species: rat**

AMPA-receptor specific biogenesis complexes control synaptic transmission and intellectual ability.
Brechet A, Buchert R, Schwenk J, Boudkkazi S, Zolles G, Siquier-Pernet K, Schaber I, Bildl W, Saadi A, Bole-Feysot C, Nitschke P, et al.
Nature communications (2017) 8: 15910. . **IP; tested species: mouse**

Deletion of olfactomedin 2 induces changes in the AMPA receptor complex and impairs visual, olfactory, and motor functions in mice.
Sultana A, Nakaya N, Dong L, Abu-Asab M, Qian H, Tomarev SI
Experimental neurology (2014) 261: 802-11. . **WB**

Deletion in the N-terminal half of olfactomedin 1 modifies its interaction with synaptic proteins and causes brain dystrophy and abnormal behavior in mice.
Nakaya N, Sultana A, Munasinghe J, Cheng A, Mattson MP, Tomarev SI
Experimental neurology (2013) 250: 205-18. . **WB; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/182203 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.