SYSY Antibodies

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GluA2

Cat.No. 182 211; Monoclonal mouse antibody, 100 µg purified IgM (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgM, lyophilized. Azide was added before lyophilization. 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 up to 1 : 10000 (AP staining) **IP**: not tested yet **ICC**: not tested yet **IHC**: not tested yet **IHC-P**: not tested yet
Clone	143A10
Subtype	IgM
Immunogen	Recombinant protein corresponding to AA 836 to 883 from rat GluA2 (UniProt Id: P19491)
Reactivity	Reacts with: rat (P19491), mouse (P23819). Other species not tested yet.
Matching control	182-1P

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 182 211

Dendritic autophagy degrades postsynaptic proteins and is required for long-term synaptic depression in mice.
Kallergi E, Daskalaki AD, Kolaxi A, Camus C, Ioannou E, Mercaldo V, Haberkant P, Stein F, Sidiropoulou K, Dalezios Y, Savitski MM, et al.
Nature communications (2022) 131: 680. . **WB; tested species: mouse**

Profiling of purified autophagic vesicle degradome in the maturing and aging brain.
Kallergi E, Siva Sankar D, Matera A, Kolaxi A, Paolicelli RC, Dengjel J, Nikoletopoulou V
Neuron (2023) : . . **WB; tested species: mouse**

Selected General References

A nomenclature for ligand-gated ion channels.
Collingridge GL et al. Neuropharmacology (2009) PubMed:18655795

Differential regulation of dendrite complexity by AMPA receptor subunits GluR1 and GluR2 in motor neurons.
Prithviraj R et al. Dev Neurobiol (2008) PubMed:18000827

Differential localization of the GluR1 and GluR2 subunits of the AMPA-type glutamate receptor among striatal neuron types in rats.
Deng YP et al. J. Chem. Neuroanat. (2007) PubMed:17446041

Interactions between NEEP21, GRIP1 and GluR2 regulate sorting and recycling of the glutamate receptor subunit GluR2.
Steiner P et al. EMBO J. (2005) PubMed:16037816

Widespread expression of the AMPA receptor GluR2 subunit at glutamatergic synapses in the rat spinal cord and phosphorylation of GluR1 in response to noxious stimulation revealed with an antigen-unmasking method.
Nagy GG et al. J. Neurosci. (2004) PubMed:15215299

Induction of dendritic spines by an extracellular domain of AMPA receptor subunit GluR2.
Passafaro M et al. Nature (2003) PubMed:12904794

The influence of glutamate receptor 2 expression on excitotoxicity in Glur2 null mutant mice.
Iihara K et al. J. Neurosci. (2001) PubMed:11264298

PDZ proteins interacting with C-terminal GluR2/3 are involved in a PKC-dependent regulation of AMPA receptors at hippocampal synapses.
Daw MI et al. Neuron (2000) PubMed:11163273

The AMPA receptor GluR2 C terminus can mediate a reversible, ATP-dependent interaction with NSF and alpha- and beta-SNAPs.
Osten P et al. Neuron (1998) PubMed:9697855

Synaptic distribution of GluR2 in hippocampal GABAergic interneurons and pyramidal cells: a double-label immunogold analysis.
He Y et al. Exp. Neurol. (1998) PubMed:9514819

RNA editing of the glutamate receptor subunits GluR2 and GluR6 in human brain tissue.
Paschen W et al. J. Neurochem. (1994) PubMed:7523595

Access the online factsheet including applicable protocols at https://sysy.com/product/182211 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.