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

GluK2 (GluR6)

Cat.No. 180-0P; control protein, 100 µg protein (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg protein, lyophilized. For **reconstitution** add 100 µl H_2O to get a 1mg/ml solution in TBS. Then aliquot and store at -20°C to -80°C until use. Control proteins should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Immunogen	Recombinant protein corresponding to AA 844 to 908 from rat GluK2 (UniProt Id: P42260)
Recommended dilution	Optimal concentrations should be determined by the end-user.
Matching antibodies	180 003
Remarks	This control protein consists of the recombinant protein (aa 844 - 908 of rat GluK 2) that has been used for immunization. It has been tested in preadsorption experiments and blocks efficiently and specifically the corresponding signal in Western blots. The amount of protein needed for efficient blocking depends on the titer and on the affinity of the antibody to the antigen.

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

Background

Ionotropic glutamate receptors (iGluRs) 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. KARs can be found at pre- and postsynaptic sites and are composed of five different subunits: GluK1, **GluK2** and **GluK3** can form homomeric receptors whereas GluK4 and **GluK5** form heteromeric receptors with GluK1-3.

Selected General References

Glutamate receptor ion channels: structure, regulation, and function.
Traynelis SF et al. Pharmacol Rev (2010) PubMed:20716669

Structure and assembly mechanism for heteromeric kainate receptors.
Kumar J et al. Neuron (2011) PubMed:21791290

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

GluR7 is an essential subunit of presynaptic kainate autoreceptors at hippocampal mossy fiber synapses.
Pinheiro PS et al. Proc. Natl. Acad. Sci. U.S.A. (2007) PubMed:17620617

Functional significance of the kainate receptor GluR6(M836I) mutation that is linked to autism.
Strutz-Seebohm N et al. Cell. Physiol. Biochem. (2006) PubMed:17167233

The kainate receptor subunit GluR6 mediates metabotropic regulation of the slow and medium AHP currents in mouse hippocampal neurones.
Fisahn A et al. J. Physiol. (Lond.) (2005) PubMed:15539395

Co-assembly of two GluR6 kainate receptor splice variants within a functional protein complex.
Coussen F et al. Neuron (2005) PubMed:16102538

Time-dependent effect of kainate-induced seizures on glutamate receptor GluR5, GluR6, and GluR7 mRNA and Protein Expression in rat hippocampus.
Ullal G et al. Epilepsia (2005) PubMed:15857425

Differential trafficking of GluR7 kainate receptor subunit splice variants.
Jaskolski F et al. J. Biol. Chem. (2005) PubMed:15805114

Channel-opening kinetics of GluR6 kainate receptor.
Li G et al. Biochemistry (2003) PubMed:14567698

Glutamate receptor RNA editing: a molecular analysis of GluR2, GluR5 and GluR6 in human brain tissues and in NT2 cells following in vitro neural differentiation.
Barbon A et al. Brain Res. Mol. Brain Res. (2003) PubMed:14559151

Functional GluR6 kainate receptors in the striatum: indirect downregulation of synaptic transmission.
Chergui K et al. J. Neurosci. (2000) PubMed:10704492

A standardized nomenclature for adenosine deaminases that act on RNA.
Bass BL et al. RNA (1997) PubMed:9292492

Homomeric and heteromeric ion channels formed from the kainate-type subunits GluR6 and KA2 have very small, but different, unitary conductances.
Howe JR et al. J. Neurophysiol. (1996) PubMed:8836240

Transmembrane topology of the glutamate receptor subunit GluR6.
Roche KW et al. J. Biol. Chem. (1994) PubMed:8163463

Access the online factsheet including applicable protocols at https://sysy.com/product/180-0P 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.