SYSY Antibodies

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Kv1.2

Cat.No. 402 015; Polyclonal Guinea pig antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was 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**: not recommended **IP**: not tested yet **ICC**: not tested yet **IHC**: 1 : 500 (see remarks) **IHC-P (FFPE)**: not recommended
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of rat Kv1.2 (UniProt Id: P63142)
Reactivity	Reacts with: rat (P63142), mouse (P63141). Other species not tested yet.
Remarks	**IHC**: Antigen retrieval with citrate buffer pH 6 can be applied to improve the signal-to-noise ratio.

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

Background

A high diversity of K+ channels is formed in the nervous system by heteromeric assembly of subunits encoded by a large number of K+ channel genes. They play an important role in regulating the level of neuronal excitability.
Deletion of **Kv 1.2** is lethal in mice and mutations lead to severe consequences including epileptic encephalopathy, intellectual disability and episodic ataxia in humans.

Selected General References

Extracellular redox sensitivity of Kv1.2 potassium channels.
Baronas VA et al. Sci Rep (2017) PubMed:28831076

Extracellular Linkers Completely Transplant the Voltage Dependence from Kv1.2 Ion Channels to Kv2.1.
Elinder F et al. Biophys. J. (2016) PubMed:27760355

Determinants of frequency-dependent regulation of Kv1.2-containing potassium channels.
Baronas VA et al. Channels (Austin) (2016) PubMed:26646078

Activity-dependent downregulation of D-type K+ channel subunit Kv1.2 in rat hippocampal CA3 pyramidal neurons.
Hyun JH et al. J. Physiol. (Lond.) (2013) PubMed:23981714

Cellular mechanisms and behavioral consequences of Kv1.2 regulation in the rat cerebellum.
Williams MR et al. J. Neurosci. (2012) PubMed:22764231

Dynamics of the Kv1.2 voltage-gated K+ channel in a membrane environment.
Jogini V et al. Biophys. J. (2007) PubMed:17704179

Age-related changes in the distribution of Kv1.1 and Kv1.2 channel subunits in the rat cerebellum.
Chung YH et al. Brain Res. (2001) PubMed:11282376

Expression of Kv1.2 potassium channels in rat sensory ganglia. An immunohistochemical study.
Yokoyama S et al. Ann. N. Y. Acad. Sci. (1999) PubMed:10414321

Localization of Kv1.1 and Kv1.2, two K channel proteins, to synaptic terminals, somata, and dendrites in the mouse brain.
Wang H et al. J. Neurosci. (1994) PubMed:8046438

Access the online factsheet including applicable protocols at https://sysy.com/product/402015 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.