SYSY Antibodies

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Kv2.2

Cat.No. 231-1P; control peptide, 100 µg peptide (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg peptide, lyophilized. 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. Control peptides should be stored at -20°C when still lyophilized! For detailed information, see back of the data sheet.
Immunogen	Synthetic peptide corresponding to AA 859 to 873 from rat Kv2.2 (UniProt Id: Q63099)
Recommended dilution	Optimal concentrations should be determined by the end-user.
Matching antibodies	231 103
Remarks	This control protein consists of the synthetic peptide (aa 859-873 of mouse Kv 2.2) 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 peptide 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

Voltage-gated potassium (Kv) channels regulate many aspects of neuronal excitability like shaping of action potentials or modulating of spike patterns.
Mammalian neurons express more than 20 different Kv subunits that can be subdivided into 12 families. Heteromeric assembly of four subunits and differential phosphorylation of Kv channels give rise to a huge molecular and functional diversity.
The Kv 2 subfamily comprising **Kv 2.1** (DRK 1, Kcnb 1) and **Kv 2.2** (CDRK, Kcnb 2) is a unique exception since they do not form heterodimers. Kv 2.1 is found in large clusters on the soma and proximal dendrites of pyramidal neurons.

Selected General References

Formation of heteromeric Kv2 channels in mammalian brain neurons.
Kihira Y, Hermanstyne TO, Misonou H
The Journal of biological chemistry (2010) 28520: 15048-55. .

Immunolocalization of the voltage-gated potassium channel Kv2.2 in GABAergic neurons in the basal forebrain of rats and mice.
Hermanstyne TO, Kihira Y, Misono K, Deitchler A, Yanagawa Y, Misonou H
The Journal of comparative neurology (2010) 51821: 4298-310. .

Intracellular regions of potassium channels: Kv2.1 and heag.
Wray D
European biophysics journal : EBJ (2009) 383: 285-92. .

Glutamate transporters regulate extrasynaptic NMDA receptor modulation of Kv2.1 potassium channels.
Mulholland PJ, Carpenter-Hyland EP, Hearing MC, Becker HC, Woodward JJ, Chandler LJ
The Journal of neuroscience : the official journal of the Society for Neuroscience (2008) 2835: 8801-9. .

Target soluble N-ethylmaleimide-sensitive factor attachment protein receptors (t-SNAREs) differently regulate activation and inactivation gating of Kv2.2 and Kv2.1: Implications on pancreatic islet cell Kv channels.
Wolf-Goldberg T, Michaelevski I, Sheu L, Gaisano HY, Chikvashvili D, Lotan I
Molecular pharmacology (2006) 703: 818-28. .

Molecular rearrangements of the Kv2.1 potassium channel termini associated with voltage gating.
Kobrinsky E, Stevens L, Kazmi Y, Wray D, Soldatov NM
The Journal of biological chemistry (2006) 28128: 19233-40. .

Kv2.1 potassium channels are retained within dynamic cell surface microdomains that are defined by a perimeter fence.
O'Connell KM, Rolig AS, Whitesell JD, Tamkun MM
The Journal of neuroscience : the official journal of the Society for Neuroscience (2006) 2638: 9609-18. .

Graded regulation of the Kv2.1 potassium channel by variable phosphorylation.
Park KS, Mohapatra DP, Misonou H, Trimmer JS
Science (New York, N.Y.) (2006) 3135789: 976-9. .

A novel targeting signal for proximal clustering of the Kv2.1 K+ channel in hippocampal neurons.
Lim ST, Antonucci DE, Scannevin RH, Trimmer JS
Neuron (2000) 252: 385-97. .

Phosphorylation of the Kv2.1 K+ channel alters voltage-dependent activation.
Murakoshi H, Shi G, Scannevin RH, Trimmer JS
Molecular pharmacology (1997) 525: 821-8. .

Expression of Kv2.1 delayed rectifier K+ channel isoforms in the developing rat brain.
Trimmer JS
FEBS letters (1993) 3242: 205-10. .

CDRK and DRK1 K+ channels have contrasting localizations in sensory systems.
Hwang PM, Cunningham AM, Peng YW, Snyder SH
Neuroscience (1993) 553: 613-20. .

Access the online factsheet including applicable protocols at https://sysy.com/product/231-1P 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.