

Ankyrin G

Cat.No. 386 005; 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 ₂ O 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 : 5000 (AP staining) IP: yes ICC: 1 : 500 IHC: 1 : 500 IHC-P: 1 : 500
Immunogen	Recombinant protein corresponding to residues near the carboxy terminus of mouse Ankyrin G. (UniProt Id: G5E8K5-1)
Reactivity	Reacts with: rat (O70511-1), mouse (G5E8K5-1). Other species not tested yet.
Specificity	Specific for Ankyrin G, detects all described splice variants.

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

Background

Ankyrin G is a membrane-cytoskeleton linker. It may participate in the targeting and clustering of ion channels and cell adhesion molecules at the nodes of Ranvier and axonal initial segments (AIS).

Selected References for 386 005

- The core PCP protein Prickle2 regulates axon number and AIS maturation by binding to AnkG and modulating microtubule bundling.
Dorrego-Rivas A, Ezan J, Moreau MM, Poirault-Chassac S, Aubailly N, De Neve J, Blanchard C, Castets F, Fréal A, Battefeld A, Sans N, et al.
Science advances (2022) 836: eabo6333. . **WB, IP**
- Oligodendrocyte-derived LGI3 and its receptor ADAM23 organize juxtaparanodal Kv1 channel clustering for short-term synaptic plasticity.
Miyazaki Y, Otsuka T, Yamagata Y, Endo T, Sanbo M, Sano H, Kobayashi K, Inahashi H, Kornau HC, Schmitz D, Prüss H, et al.
Cell reports (2024) 431: 113634. . **IHC; tested species: mouse**
- 14-3-3 proteins stabilize LGI1-ADAM22 levels to regulate seizure thresholds in mice.
Yokoi N, Fukata Y, Okatsu K, Yamagata A, Liu Y, Sanbo M, Miyazaki Y, Goto T, Abe M, Kassai H, Sakimura K, et al.
Cell reports (2021) 3711: 110107. . **ICC; tested species: mouse**
- The downregulation of Kv1 channels in Lgi1-/-mice is accompanied by a profound modification of its interactome and a parallel decrease in Kv2 channels.
Ramirez-Franco J, Debreaux K, Sangiardi M, Belghazi M, Kim Y, Lee SH, Lévêque C, Seagar M, El Far O
Neurobiology of disease (2024) : 106513. . **IHC; tested species: mouse**
- Integrative multi-omic analysis reveals conserved cell-projection deficits in human Down syndrome brains.
Rastogi M, Bartolucci M, Nanni M, Aloisio M, Vozzi D, Petretto A, Contestabile A, Cancedda L
Neuron (2024) 11215: 2503-2523.e10. . **ICC; tested species: mouse**
- Neurofilament Levels in Dendritic Spines Associate with Synaptic Status.
Gürth CM, do Rego Barros Fernandes Lima MA, Macarrón Palacios V, Cereceda Delgado AR, Hubrich J, D'Este E
Cells (2023) 126: . . **ICC; tested species: rat**
- Adaptor protein-3 produces synaptic vesicles that release phasic dopamine.
Jain S, Yee AG, Maas J, Gierok S, Xu H, Stansil J, Eriksen J, Nelson AB, Silm K, Ford CP, Edwards RH, et al.
Proceedings of the National Academy of Sciences of the United States of America (2023) 12042: e2309843120. . **ICC; tested species: mouse**
- Rescue of Normal Excitability in LGI1-Deficient Epileptic Neurons.
Extrémé J, Ramirez-Franco J, Fronzaroli-Molinieres L, Boumedine-Guignon N, Ankr N, El Far O, Garrido JJ, Debanne D, Russier M
The Journal of neuroscience : the official journal of the Society for Neuroscience (2023) 4350: 8596-8606. . **IHC; tested species: mouse**
- Multilayered regulations of alternative splicing, NMD, and protein stability control temporal induction and tissue-specific expression of TRIM46 during axon formation.
Vuong JK, Ergin V, Chen L, Zheng S
Nature communications (2022) 131: 2081. . **ICC; tested species: mouse**

Selected General References

- Structural basis for the membrane association of ankyrinG via palmitoylation.
Fujiwara Y et al. Sci Rep (2016) PubMed:27046665
- betaIV spectrin is recruited to axon initial segments and nodes of Ranvier by ankyrinG.
Yang Y et al. J. Cell Biol. (2007) PubMed:17283186
- AnkyrinG is required for clustering of voltage-gated Na channels at axon initial segments and for normal action potential firing.
Zhou D et al. J. Cell Biol. (1998) PubMed:9832557

Access the online factsheet including applicable protocols
at <https://sysy.com/product/386005> 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.