

Ankyrin G

Cat.No. 386 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were 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 (AP staining) IP: not tested yet ICC: 1 : 500 up to 1 : 1000 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), human (Q12955). 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 386 003

Impaired OTUD7A-dependent Ankyrin regulation mediates neuronal dysfunction in mouse and human models of the 15q13.3 microdeletion syndrome.

Unda BK, Chalil L, Yoon S, Kilpatrick S, Irwin C, Xing S, Murtaza N, Cheng A, Brown C, Afonso A, McCready E, et al. *Molecular psychiatry* (2023) 284: 1747-1769. . **WB, ICC; tested species: human,mouse**

Deletion of class II ARFs in mice causes tremor by the Nav1.6 loss in cerebellar Purkinje cell axon initial segments. Hosoi N, Shibasaki K, Hosono M, Konno A, Shinoda Y, Kiyonari H, Inoue K, Muramatsu SI, Ishizaki Y, Hirai H, Furuichi T, et al. *The Journal of neuroscience : the official journal of the Society for Neuroscience* (2019) : . . **IHC; tested species: mouse**

Development of myelination and axon diameter for fast and precise action potential conductance.

Nabel AL, Teich L, Wohlfrom H, Alexandrova O, Heß M, Pecka M, Grothe B *Glia* (2024) : . . **IHC**

Motor learning changes the axon initial segment of the spinal motoneuron.

Wang Y, Chen Y, Chen L, Herron BJ, Chen XY, Wolpaw JR *The Journal of physiology* (2024) 6029: 2107-2126. . **IHC; tested species: rat**

Spectrin-beta 2 facilitates the selective accumulation of GABAA receptors at somatodendritic synapses.

Smalley JL, Cho N, Ng SFJ, Choi C, Lemons AHS, Chaudry S, Bope CE, Dengler JS, Zhang C, Rasband MN, Davies PA, et al. *Communications biology* (2023) 61: 11. . **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**

Kv7/KCNQ potassium channels in cortical hyperexcitability and juvenile seizure-related death in Ank2-mutant mice.

Oh H, Lee S, Oh Y, Kim S, Kim YS, Yang Y, Choi W, Yoo YE, Cho H, Lee S, Yang E, et al. *Nature communications* (2023) 141: 3547. . **IHC; tested species: mouse**

Endocytosis in the axon initial segment maintains neuronal polarity.

Eichel K, Uenaka T, Belapurkar V, Lu R, Cheng S, Pak JS, Taylor CA, Südhof TC, Malenka R, Wernig M, Özkan E, et al. *Nature* (2022) : . . **ICC; tested species: mouse**

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. . **ICC; tested species: rat**

Development of microglia in fetal and postnatal neocortex of the pig, the European wild boar (*Sus scrofa*).

Sobierajski E, Lauer G, Aktas M, Beemelmans C, Beemelmans C, Meyer G, Wahle P *The Journal of comparative neurology* (2021) : . . **IHC; tested species: pig**

Neuregulins 1, 2, and 3 Promote Early Neurite Outgrowth in ErbB4-Expressing Cortical GABAergic Interneurons.

Rahman-Enyart A, Lai C, Prieto AL *Molecular neurobiology* (2020) : . . **ICC; tested species: rat**

Phosphorylation on Ser 359 of the α2 subunit in GABA type A receptors down-regulates their density at inhibitory synapses.

Nakamura Y, Morrow DH, Nathanson AJ, Henley JM, Wilkinson KA, Moss SJ *The Journal of biological chemistry* (2020) : . . **ICC; tested species: rat**

Loss of Neurofascin-186 Disrupts Alignment of AnkyrinG Relative to Its Binding Partners in the Axon Initial Segment.

Alpizar SA, Baker AL, Gullledge AT, Hoppa MB *Frontiers in cellular neuroscience* (2019) 13: 1. . **ICC; tested species: rat**

Access the online factsheet including applicable protocols at <https://sysy.com/product/386003> 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.