

## Ankyrin G

**Cat.No. 386 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)**

### Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For <b>reconstitution</b> add 100 µl H <sub>2</sub> O, then aliquot and store at -20°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	<b>WB:</b> 1 : 1000 up to 1 : 5000 (AP staining) (see remarks) <b>IP:</b> not tested yet <b>ICC:</b> 1 : 500 up to 1 : 1000 <b>IHC:</b> 1 : 500 <b>IHC-P:</b> 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. K.D. validated PubMed: <a href="https://pubmed.ncbi.nlm.nih.gov/31727776/">31727776</a>
Remarks	<b>WB:</b> Due to the large size of this protein, we recommend NuPAGE 3-8% Tris-Acetate gels for SDS-PAGE.

**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 386 004

- Immunoproteomic analysis reveals the axon initial segment proteome.  
Zhang W, Fu Y, Peng L, Ogawa Y, Ding X, Rasband A, Zhou X, Shelly M, Rasband MN, Zou P  
Nature communications (2023) 141: 8201. . **ICC, IHC; tested species: rat**
- Neurocan regulates axon initial segment organization and neuronal activity.  
Baidoe-Ansah D, Mirzapourdelavar H, Aleshin S, Schott BH, Seidenbecher C, Kaushik R, Dityatev A  
Matrix biology : journal of the International Society for Matrix Biology (2025) : . . **WB, ICC; tested species: mouse**
- A distinct PP2A subunit regulates local protein phosphorylation at the axon initial segment.  
Anderson AP, Kim S, Melton AJ, Ding X, Zhang W, Saltzman AB, Malovannaya A, Rasband MN, Gao Y  
Nature communications (2025) 161: 10850. . **ICC, IHC; tested species: mouse**
- A hierarchy of PDZ domain scaffolding proteins clusters the Kv1 K+ channel protein complex at the axon initial segment.  
Zhang W, Palfini VL, Wu Y, Ding X, Melton AJ, Gao Y, Ogawa Y, Rasband MN  
Science advances (2025) 1121: eadv1281. . **ICC, IHC; KD verified; tested species: mouse, rat**
- Age-dependent regulation of axoglial interactions and behavior by oligodendrocyte AnkyrinG.  
Ding X, Wu Y, Vainshtein A, Rodriguez V, Ricco E, Okoh JT, Liu Y, Kraushaar DC, Peles E, Rasband MN  
Nature communications (2024) 151: 10865. . **WB, IHC; tested species: mouse**
- An ankyrin G-binding motif mediates TRAAK periodic localization at axon initial segments of hippocampal pyramidal neurons.  
Luque-Fernández V, Vanspauwen SK, Landra-Willm A, Arvedsen E, Besquent M, Sandoz G, Rasmussen HB  
Proceedings of the National Academy of Sciences of the United States of America (2024) 12131: e2310120121. . **IHC\_FR; tested species: rat**
- Mapping spatial organization of in vitro neuronal networks using high-content imaging.  
Casotto A, Frias CP, Joosten M, Teurlings SMW, Schonewille M, van Woerden GM, Zwanikken JW, Meijer DH  
Scientific reports (2025) 161: 88. . **ICC; tested species: mouse**
- Activation of dopamine D1 receptors at the axon initial segment-like process of retinal AII amacrine cells modulates action potential firing.  
Veruki ML, Liu JH, Singh JB, Luppi MS, Hartveit E  
The Journal of neuroscience : the official journal of the Society for Neuroscience (2025) : . . **IHC; tested species: rat**
- Membrane mechanics dictate axonal pearls-on-a-string morphology and function.  
Griswold JM, Bonilla-Quintana M, Pepper R, Lee CT, Raychaudhuri S, Ma S, Gan Q, Syed S, Zhu C, Bell M, Suga M, et al.  
Nature neuroscience (2024) : . . **ICC; tested species: mouse**
- Transcriptomic alterations in APP/PS1 mice astrocytes lead to early postnatal axon initial segment structural changes.  
Benitez MJ, Retana D, Ordoñez-Gutiérrez L, Colmena I, Gómez MJ, Álvarez R, Ciorraga M, Dopazo A, Wandosell F, Garrido JJ  
Cellular and molecular life sciences : CMLS (2024) 811: 444. . **ICC; tested species: mouse**
- Postsynaptic β1 spectrin maintains Na+ channels at the neuromuscular junction.  
Sert O, Ding X, Zhang C, Mi R, Hoke A, Rasband MN  
The Journal of physiology (2024) 6026: 1127-1145. . **WB; tested species: mouse**
- The awakening of dormant neuronal precursors in the adult and aged brain.  
Benedetti B, Reisinger M, Hochwartner M, Gabriele G, Jakubecova D, Benedetti A, Bonfanti L, Couillard-Despres S  
Aging cell (2023) : e13974. . **IHC; tested species: mouse**
- Aging-Associated Changes in Cognition, Expression and Epigenetic Regulation of Chondroitin 6-Sulfotransferase Chst3.  
Baidoe-Ansah D, Sakib S, Jia S, Mirzapourdelavar H, Strackeljan L, Fischer A, Aleshin S, Kaushik R, Dityatev A  
Cells (2022) 1113: . . **IHC; tested species: mouse**
- Disruption of tubulin-alpha4a polyglutamylation prevents aggregation of hyper-phosphorylated tau and microglia activation in mice.  
Hausrat TJ, Janiesch PC, Breiden P, Lutz D, Hoffmeister-Ullrich S, Hermans-Borgmeyer I, Failla AV, Kneussel M  
Nature communications (2022) 131: 4192. . **ICC; tested species: mouse**

Access the online factsheet including applicable protocols  
at <https://sysy.com/product/386004> 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 at 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.