SYSY Antibodies

Rudolf-Wissell-Str. 28a
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: www.sysy.com

Ankyrin G

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

Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For **reconstitution** add 100 µl H_2O, 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	**WB**: 1 : 1000 up to 1 : 5000 (AP staining) (see remarks) **IP**: not tested yet **ICC**: 1 : 500 up to 1 : 1000 **IHC**: 1 : 500 **IHC-P (FFPE)**: 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: 31727776
Remarks	**WB**: 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

Immunoproximity biotinylation 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, Goméz 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-Ullerich 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 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.