

Aquaporin4

Cat.No. 429 006; Polyclonal chicken antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide 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: not recommended IP: not tested yet ICC: 1 : 1000 up to 1 : 2000 IHC: 1 : 500 up to 1 : 1000 (see remarks) IHC-P (FFPE): not tested yet
Immunogen	Recombinant protein corresponding to AA 249 to 323 from mouse Aquaporin-4 isoform 2 (UniProt Id: P55088-1)
Reactivity	Reacts with: rat (P47863), mouse (P55088-1). Other species not tested yet.
Specificity	Specific for Aquaporin-4, detects all described isoforms.
Matching control	429-0P
Remarks	IHC: Antigen retrieval with citrate buffer pH 6 is tolerated.

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

Background

Aquaporin4, or AQP4, also known as Mercurial-insensitive water channel (MIWC), is a member of the aquaporin water channel family. This osmoreceptor regulates body water balance and mediates water flow within the central nervous system.

For more information on protein expression pattern, please refer to the overview image in our SYSY Antibodies ATLAS.

Selected References for 429 006

Immunotherapy targeting plasma ASM is protective in a mouse model of Alzheimer's disease.
Choi BJ, Park MH, Park KH, Han WH, Yoon HJ, Jung HY, Hong JY, Chowdhury MR, Kim KY, Lee J, Song IS, et al. Nature communications (2023) 141: 1631. . **IHC; tested species: mouse**

Inhibiting astrocyte connexin-43 hemichannels blocks radiation-induced vesicular VEGF-A release and blood-brain barrier dysfunction.
Schumacher S, Tahiri H, Ezan P, Rouach N, Witschas K, Leybaert L. Glia (2024) 721: 34-50. . **IHC; tested species: mouse**

INSIGHT: an accessible multi-scale, multi-modal 3D spatial biology platform.
Yau CN, Hung JTS, Campbell RAA, Wong TCY, Huang B, Wong BTY, Chow NKN, Zhang L, Tsoi EPL, Tan Y, Li JJX, et al. Nature communications (2024) 151: 10888. . **IHC; tested species: mouse**

Evaluation of gliovascular functions of Aqp4 readthrough isoforms.
Mueller SM, White KM, Fass SB, Chen S, Shi Z, Ge X, Engelbach JA, Gaines SH, Bice AR, Vasek MJ, Garbow JR, et al. bioRxiv : the preprint server for biology (2023) : . . **IHC; tested species: mouse**

Selected General References

Radial glial elements in the cerebral cortex of the lesser hedgehog tenrec.
Mack AF et al. Brain Struct Funct (2018) PubMed:30094606

Expression and Distribution Pattern of Aquaporin 4, 5 and 11 in Retinas of 15 Different Species.
Amann B et al. Int J Mol Sci (2016) PubMed:27438827

Physiological roles of aquaporin-4 in brain.
Nagelhus EA et al. Physiol. Rev. (2013) PubMed:24137016

Access the online factsheet including applicable protocols at <https://sysy.com/product/429006> 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.