

IBA1

Cat.No. 234 013; 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 : 1000 IHC: 1 : 1000 up to 1 : 5000 IHC-P: 1 : 1000
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of mouse IBA1 (UniProt Id: Q9EQW9)
Reactivity	Reacts with: rat (P55009), mouse (O70200), human (P55008). Other species not tested yet.
Specificity	K.O. validated

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

Background

Ionized calcium-binding adaptor molecule **1 (IBA1)** or allograft inflammatory factor**1 (AIF-1)** is an EF hand calcium binding protein which is expressed by cells of the monocyte/macrophage lineage and by germ cells in the testis (1). In mice, IBA1/AIF-1 can be regarded a "pan-macrophage marker" because, except for alveolar macrophages, all subpopulations of macrophages express IBA1/AIF-1 (1). In human gliomas IBA1 defines a distinct subset of tumor-associated activated macrophages/microglial cells (2). Microglia represent the resident macrophages in the nervous system and are the smallest of the glial cells with cell bodies of only 2-5 µm in diameter. In the CNS IBA1 upregulation is associated with neuroinflammatory response (3).

Selected References for 234 013

- Peptidoglycan accumulates in distinct brain regions and cell types over lifetime but is absent in newborns. Zeiher C, Kuhrt H, Rifflet A, Winter K, Boon L, Stassar RM, Nutma E, Middeldorp J, Strating IM, Boneca IG, Bechmann I, et al. *Brain, behavior, and immunity* (2024) 123: 799-812. . **IHC-P; tested species: human**
- Heterogeneity of neurons reprogrammed from spinal cord astrocytes by the proneural factors *Ascl1* and *Neurogenin2*. Kempf J, Knelles K, Hersbach BA, Petrik D, Riedemann T, Bednarova V, Janjic A, Simon-Ebert T, Enard W, Smialowski P, Götz M, et al. *Cell reports* (2021) 363: 109409. . **ICC; tested species: mouse**
- Undisturbed climbing fiber pruning in the cerebellar cortex of CX3 CR1-deficient mice. Kaiser N, Pätz C, Brachtendorf S, Eilers J, Bechmann I *Glia* (2020) : . . **IHC; tested species: mouse**
- Evaluating CXCL12 for Effects on Reactive Gene Expression in Primary Astrocytes. Zieger K, Cao C, Engle J *Journal of molecular neuroscience* : MN (2024) 742: 57. . **ICC; tested species: rat**
- Redefining the ontogeny of hyalocytes as yolk sac-derived tissue-resident macrophages of the vitreous body. Rosmus DD, Koch J, Hausmann A, Chiot A, Arnhold F, Masuda T, Kierdorf K, Hansen SM, Kuhrt H, Fröba J, Wolf J, et al. *Journal of neuroinflammation* (2024) 211: 168. . **IHC; tested species: mouse**
- Longitudinal imaging of vitreal hyperreflective foci in mice with acute optic nerve damage using visible-light optical coherence tomography. Fan W, Miller DA, Chang S, Kweon J, Yeo WH, Grannonico M, Liu X, Zhang HF *Optics letters* (2024) 498: 1880-1883. . **IHC; tested species: mouse**
- Developmental profile of microglia distribution in nuclei of the superior olivary complex. Zacher AC, Hohaus K, Felmy F, Pätz-Warncke C *The Journal of comparative neurology* (2023) : . . **IHC**
- A modified protocol for isolation of retinal microglia from the pig. Zhang Y, Erhard AL, Plagemann T, Eter N, Heiduschka P *Experimental eye research* (2021) 207: 108584. . **ICC; tested species: pig**
- Maternal omega-3 intake differentially affects the endocannabinoid system in the progeny's neocortex and hippocampus: Impact on synaptic markers. Isaac AR, de Velasco PC, Fraga KYD, Tavares-do-Carmo MDG, Campos RMP, Iannotti FA, Verde R, Martins DBG, Santos TA, Ferreira BK, de Mello FG, et al. *The Journal of nutritional biochemistry* (2021) 96: 108782. . **IHC; tested species: rat**
- Classification of Microglial Morphological Phenotypes Using Machine Learning. Leyh J, Paeschke S, Mages B, Michalski D, Nowicki M, Bechmann I, Winter K *Frontiers in cellular neuroscience* (2021) 15: 701673. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at <https://sysy.com/product/234013> 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.