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IBA1

Cat.No. 234 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 μg purified IgG, lyophilized. Albumin and azide were added for stabilization. For reconstitution add 100 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: 500 up to 1: 1000 (AP staining) IP: yes ICC: 1: 500 up to 1: 2000 IHC: 1: 500 up to 1: 2000 IHC-P: 1: 100 up to 1: 2000
Clone	311H9H4
Subtype	IgG2a (κ light chain)
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of rat IBA1 (UniProt Id: P55009)
Reactivity	Reacts with: mouse (Q9EQW9), rat (P55009), human (P55008), monkey. Other species not tested yet.
Matching control	234-0P

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 factor1 (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 234 011

Age-associated microglial transcriptome leads to diminished immunogenicity and dysregulation of MCT4 and P2RY12/P2RY13 related functions.

Škandík M, Friess L, Vázquez-Cabrera G, Keane L, Grabert K, Cruz De Los Santos M, Posada-Pérez M, Baleviciute A, Cheray M, Joseph B

Cell death discovery (2025) 111: 16. . IHC-P; tested species: human

Exacerbated Age-Related Hippocampal Alterations of Microglia Morphology, β-Amyloid and Lipofuscin Deposition and Presenilin Overexpression in Per1-/-Mice.

Börner JH, Rawashdeh O, Rami A

Antioxidants (Basel, Switzerland) (2021) 109: .. IHC; tested species: mouse

Transplantation of Wild-Type Hematopoietic Stem and Progenitor Cells Improves Disease Phenotypes in a Mucopolysaccharidosis IIIC Mouse Model.

Badell-Grau RA, Pakravesh K, Thai KE, Son F, Chen R, Rainaldi J, Duong K, Losay P, Sivakumar A, Khare V, Corl AN, et al. Cell transplantation (2025) 34: 9636897251323966. IHC; tested species: mouse

Low-Intensity Physical Exercise is Associated with Improved Myelination and Reduced Microglial Activation in a Cuprizone-Induced Demyelination Model.

Hahn KR, Hwang IK, Yoo DY

Neurochemical research (2025) 503: 182. . IHC; tested species: mouse

Characterization of a novel transgenic mouse model to investigate brain-wide activation of astrocyte Gq signaling.

Crooks AM, Onuska KM, Ngo G, Schmidt SD, Hogan-Cann AE, Eed A, Menon RS, Saksida LM, Bussey TJ, Schmitz TW, Prado VF, et al.

Lab animal (2025) 548: 207-217. . IHC; tested species: mouse

Intermittent Fasting Ameliorates β-Amyloid Deposition and Cognitive Impairment Accompanied by Decreased Lipid Droplet Aggregation Within Microglia in an Alzheimer's Disease Model.

Wu L, Zhao Y, Gong X, Liang Z, Yu J, Wang J, Zhang Y, Wang X, Shu X, Bao J

Molecular nutrition & food research (2025) 694: e202400660. . IHC; tested species: mouse

Narirutin reduces microglia-mediated neuroinflammation by inhibiting the JAK2/STAT3 pathway in MPP+/MPTP-induced Parkinson's disease models.

Gao Y, Liu W, Shi L, Yang P, Yang L, Zhao M, Luo L

Experimental neurology (2025) 389: 115232.. IHC; tested species: mouse

Shank3 related oligodendrocyte alterations in autism are restored by Erk pathway inhibition.

Ma Y, Bauer HF, Bockmann J, Schön M, Boeckers TM, Lutz AK

Molecular psychiatry (2025) : . . IHC; tested species: mouse

TAF15 downregulation contributes to the benefits of physical training on dendritic spines and working memory in aged mice. He Y, Liu B, Yang FY, Yang Q, Xu B, Liu L, Chen Y

Aging cell (2024): e14244. . IHC; tested species: mouse

Access the online factsheet including applicable protocols at https://sysy.com/product/234011 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 freezedried) 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 freezethaw cycles.
- Please refer to our tips and hints for subsequent storage of reconstituted antibodies and control peptides and proteins.