

CD11b mouse specific

Cat.No. HS-384 117; Monoclonal rat antibody, 200 µl purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl purified IgG, lyophilized. Albumin and azide were added for stabilization. For reconstitution add 200 µl H ₂ O. 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.
Concentration	1 mg/ml
Applications	WB: 1 : 1000 IP: not tested yet IHC: 1 : 500 (see remarks) IHC-P: 1 : 100 up to 1 : 200 IHC-Fr: 1 : 500 (see remarks)
Clone	298G2H5
Subtype	IgG2a (κ light chain)
Immunogen	synthetic peptide corresponding to residues surrounding AA 1000 of mouse CD11b (UniProt Id: P05555)
Reactivity	Reacts with: mouse (P05555). No signal: human (P11215), rat (G3V8L7). Other species not tested yet.
Remarks	IHC: Heat-mediated antigen retrieval (in citrate buffer pH 6) is required for immunohistochemical staining. Antibody incubation over-night at room temperature is recommended. IHC-Fr: PFA fixation is recommended.

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

Background

CD11b also called integrin alpha-M (ITGAM) is one protein subunit that forms together with CD18 the heterodimeric integrin αMβ2 complex, also known as macrophage-1 antigen (Mac-1) or complement receptor 3 (CR3) (1). αMβ2 is expressed on polymorphonuclear neutrophils (PMN), monocytes, macrophages, some subsets of cytotoxic T lymphocytes, and NK cells. Antibodies against CD11b are frequently used to identify macrophages and microglia, however not all tissue-resident macrophages are CD11b positive. In the murine liver CD11b expression is rare and almost exclusively found on F4/80 negative cells (2). In the murine spleen CD11b+ cells are less numerous than F4/80+ cells, co-expression of CD11b and F4/80 is also rare and CD11b+ cells tend to be closer to the marginal zone (2). CD11b upregulation on residential alveolar macrophages is a marker of acute and chronic lung inflammation in mice (3). Also, in the brain CD11b is markedly increased during microglial activation (4).

Selected References for HS-384 117

INSIHGT: 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) 15:1: 10888. . **IHC; tested species: mouse**

Influenza A Virus (H1N1) Infection Induces Microglial Activation and Temporal Dysbalance in Glutamatergic Synaptic Transmission.
Düsedau HP, Steffen J, Figueiredo CA, Boehme JD, Schultz K, Erck C, Korte M, Faber-Zuschratter H, Smalla KH, Dieterich D, Kröger A, et al. mBio (2021) 125: e0177621. . **IHC-P; tested species: mouse**

Rescue of Alzheimer's disease phenotype in a mouse model by transplantation of wild-type hematopoietic stem and progenitor cells.
Mishra P, Silva A, Sharma J, Nguyen J, Pizzo DP, Hinz D, Sahoo D, Cherqui S. Cell reports (2023) 428: 112956. . **IHC-P; tested species: mouse**

Selected General References

Crystal structure of the A domain from the alpha subunit of integrin CR3 (CD11b/CD18).
Lee JO et al. Cell (1995) PubMed:7867070

CD11b immunophenotyping identifies inflammatory profiles in the mouse and human lungs.
Duan M et al. Mucosal Immunol (2016) PubMed:26422753

Three-colour fluorescence immunohistochemistry reveals the diversity of cells staining for macrophage markers in murine spleen and liver.
Lloyd CM et al. J Immunol Methods (2008) PubMed:18367204

Up-regulation of microglial CD11b expression by nitric oxide.
Roy A et al. J Biol Chem (2006) PubMed:16551637

Access the online factsheet including applicable protocols at <https://sysy-histosure.com/product/HS-384117> 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.