SYSY Antibodies

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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_2O. 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 (AP staining) **IP**: not tested yet **IHC**: 1 : 500 (see remarks) **IHC-P (FFPE)**: 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**: Antigen retrieval with citrate buffer pH 6 is required. Antibody incubation over-night at room temperature is recommended. **IHC-Fr**: 4% formaldehyde/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) 151: 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.com/product/HS-384117 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.