

## Datasheet: MCA74GA

**BATCH NUMBER 161437**

<b>Description:</b>	RAT ANTI MOUSE CD11b
<b>Specificity:</b>	CD11b
<b>Other names:</b>	INTEGRIN ALPHA M CHAIN, MAC-1
<b>Format:</b>	Purified
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	M1/70.15
<b>Isotype:</b>	IgG2b
<b>Quantity:</b>	0.1 mg

## Product Details

### Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit [www.bio-rad-antibodies.com/protocols](http://www.bio-rad-antibodies.com/protocols).

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	▪			1/50 - 1/200
Immunohistology - Frozen	▪			
Immunohistology - Paraffin (1)	▪			
Immunohistology - Resin			▪	
ELISA			▪	
Immunoprecipitation	▪			
Western Blotting			▪	
Immunofluorescence	▪			

Where this antibody has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the antibody for use in their own system using appropriate negative/positive controls.

(1) **PLP fixation is recommended for optimal results, see [Whiteland et al.](#) for details**

<b>Target Species</b>	Mouse
<b>Species Cross Reactivity</b>	<p>Reacts with: Human, Rabbit</p> <p><b>N.B.</b> Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information.</p>

<b>Product Form</b>	Purified IgG - liquid
<b>Preparation</b>	Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant
<b>Buffer Solution</b>	Phosphate buffered saline
<b>Preservative Stabilisers</b>	0.09% Sodium Azide
<b>Carrier Free</b>	Yes
<b>Approx. Protein Concentrations</b>	IgG concentration 1.0 mg/ml
<b>Immunogen</b>	T cell enriched splenocytes from B10 mice.
<b>External Database Links</b>	<p><b>UniProt:</b>  <a href="#">P05555</a>    <a href="#">Related reagents</a></p> <p><b>Entrez Gene:</b>  <a href="#">16409</a> Itgam    <a href="#">Related reagents</a></p>
<b>RRID</b>	AB_324660
<b>Fusion Partners</b>	Spleen cells from immunized DA rats were fused with cells of the NS1/1.Ag4.1 mouse myeloma cell line.
<b>Specificity</b>	<p><b>Rat anti Mouse CD11b antibody, clone M1/70.15</b> recognizes the murine CD11b cell surface antigen also known as the alpha M integrin chain or MAC-1, a differentiation antigen expressed by granulocytes, monocytes, NK cells and tissue macrophages.</p> <p>The expression of CD11b increases during monocyte maturation and expression levels vary on tissue macrophages. Peritoneal macrophages are reported to express higher levels of CD11b than splenic macrophages.</p> <p>Rat anti Mouse CD11b antibody, clone M1/70.15 has been reported to block iC3b binding to its receptor (<a href="#">Beller <i>et al.</i> 1982</a>).</p> <p>Rat anti Mouse CD11b antibody, clone M1/70.15 has been reported to as being suitable for use on PLP fixed paraffin embedded tissue but has not been tested for use on formalin fixed tissue (<a href="#">Whiteland <i>et al.</i> 1995</a>).</p> <p>This product is routinely tested in flow cytometry on mouse peritoneal macrophages.</p>
<b>References</b>	<ol style="list-style-type: none"> <li>1. Beller, D.I. <i>et al.</i> (1982) Anti-Mac-1 selectively inhibits the mouse and human type three complement receptor. <a href="#">J Exp Med. 156 (4): 1000-9.</a></li> <li>2. Whiteland, J.L. <i>et al.</i> (1995) Immunohistochemical detection of T-cell subsets and other</li> </ol>

- leukocytes in paraffin-embedded rat and mouse tissues with monoclonal antibodies. [J Histochem Cytochem. 43 \(3\): 313-20.](#)
3. Welt, F.G. *et al.* (2000) Neutrophil, not macrophage, infiltration precedes neointimal thickening in balloon-injured arteries. [Arterioscler Thromb Vasc Biol. 20 \(12\): 2553-8.](#)
  4. Kapturczak, M.H. *et al.* (2004) Heme oxygenase-1 modulates early inflammatory responses: evidence from the heme oxygenase-1-deficient mouse. [Am J Pathol. 165: 1045-53.](#)
  5. Patel, P.C. and Harrison, R.E. (2008) Membrane ruffles capture C3bi-opsonized particles in activated macrophages. [Mol Biol Cell. 19: 4628-39.](#)
  6. Huang, Q.Q. *et al.* (2008) Role of H2-calponin in regulating macrophage motility and phagocytosis. [J Biol Chem. 283: 25887-99.](#)
  7. Brochard, V. *et al.* (2009) Infiltration of CD4+ lymphocytes into the brain contributes to neurodegeneration in a mouse model of Parkinson disease. [J Clin Invest. 119: 182-92.](#)
  8. Hudcovic, T. *et al.* (2009) Monocolonization with *Bacteroides ovatus* protects immunodeficient SCID mice from mortality in chronic intestinal inflammation caused by long-lasting dextran sodium sulfate treatment. [Physiol Res. 58: 101-10.](#)
  9. Kroner, A. *et al.* (2010) Ectopic T-cell specificity and absence of perforin and granzyme B alleviate neural damage in oligodendrocyte mutant mice. [Am J Pathol. 176: 549-55.](#)
  10. Kanu, N. *et al.* (2010) The ATM cofactor ATMIN protects against oxidative stress and accumulation of DNA damage in the aging brain. [J Biol Chem. 285: 38534-42.](#)
  11. Terrando, N. *et al.* (2010) The impact of IL-1 modulation on the development of lipopolysaccharide-induced cognitive dysfunction. [Crit Care. 14 \(3\): R88.](#)
  12. Ferger, A.I. *et al.* (2010) Effects of mitochondrial dysfunction on the immunological properties of microglia. [J Neuroinflammation. 7: 45.](#)
  13. Gales, A. *et al.* (2010) PPARgamma controls dectin-1 expression required for host antifungal defense against *Candida albicans*. [PLoS Pathog. 6 : e1000714.](#)
  14. Ghasemlou, N. *et al.* (2010) Mitogen-activated protein kinase-activated protein kinase 2 (MK2) contributes to secondary damage after spinal cord injury. [J Neurosci. 30: 13750-9.](#)
  15. Lefevre, L. *et al.* (2010) PPARγ ligands switched high fat diet-induced macrophage M2b polarization toward M2a thereby improving intestinal *Candida* elimination. [PLoS One. 5: e12828.](#)
  16. Samanta, J. *et al.* (2010) Noggin protects against ischemic brain injury in rodents. [Stroke. 41: 357-62.](#)
  17. Yang, X. *et al.* (2010) The role of the JAK2-STAT3 pathway in pro-inflammatory responses of EMF-stimulated N9 microglial cells. [J Neuroinflammation. 7: 54.](#)
  18. Zhang, H. *et al.* (2010) A p38 mitogen-activated protein kinase-dependent mechanism of disinhibition in spinal synaptic transmission induced by tumor necrosis factor-α. [J Neurosci. 30: 12844-55.](#)
  19. L'Episcopo, F. *et al.* (2010) Combining nitric oxide release with anti-inflammatory activity preserves nigrostriatal dopaminergic innervation and prevents motor impairment in a 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine model of Parkinson's disease. [J Neuroinflammation. 7: 83.](#)
  20. Lebson, L. *et al.* (2010) Trafficking CD11b-positive blood cells deliver therapeutic genes to the brain of amyloid-depositing transgenic mice. [J Neurosci. 30: 9651-8.](#)
  21. Kondo, Y. *et al.* (2011) Macrophages counteract demyelination in a mouse model of globoid cell leukodystrophy. [J Neurosci. 31: 3610-24.](#)

22. Geier, H. and Celli, J. (2011) Phagocytic Receptors Dictate Phagosomal Escape and Intracellular Proliferation of *Francisella tularensis*. [Infect Immun. 79: 2204-14.](#)
23. Redensek, A. *et al.* (2011) Expression and detrimental role of hematopoietic prostaglandin D synthase in spinal cord contusion injury. [Glia. 59: 603-14.](#)
24. Cunningham, K. *et al.* (2011) Conditional deletion of Ccm2 causes hemorrhage in the adult brain: a mouse model of human cerebral cavernous malformations. [Hum Mol Genet. 20: 3198-206.](#)
25. Fernández-Suárez, D. (2014) The monoacylglycerol lipase inhibitor JZL184 is neuroprotective and alters glial cell phenotype in the chronic MPTP mouse model [Neurobiol Aging. 35: 2603-16.](#)
26. Certo, M. *et al.* (2015) Activation of RXR/PPAR $\gamma$  underlies neuroprotection by bexarotene in ischemic stroke. [Pharmacol Res. 102: 298-307.](#)
27. Jones, R.S. *et al.* (2015) Inhibition of JAK2 attenuates the increase in inflammatory markers in microglia from APP/PS1 mice. [Neurobiol Aging. 36 \(10\): 2716-24.](#)
28. Nishikawa, K. *et al.* (2015) Resveratrol increases CD68<sup>+</sup> Kupffer cells colocalized with adipose differentiation-related protein and ameliorates high-fat-diet-induced fatty liver in mice. [Mol Nutr Food Res. 59 \(6\): 1155-70.](#)
29. Khan, A.A. *et al.* (2015) Therapeutic Immunization with a Mixture of Herpes Simplex Virus Type 1 Glycoprotein D Derived "Asymptomatic" Human CD8<sup>+</sup> T-cell Epitopes Decreases Spontaneous Ocular Shedding in Latently Infected HLA Transgenic Rabbits: Association with Low Frequency of Local PD-1+TIM-3+CD8<sup>+</sup> Exhausted T Cells. [J Virol. pii: JVI.00788-15.](#)
30. Kim, B.W. *et al.* (2015)  $\alpha$ -Asarone attenuates microglia-mediated neuroinflammation by inhibiting NF kappa B activation and mitigates MPTP-induced behavioral deficits in a mouse model of Parkinson's disease. [Neuropharmacology. 97: 46-57.](#)
31. Bains, M. & Roberts, J.L. (2016) Estrogen protects against dopamine neuron toxicity in primary mesencephalic cultures through an indirect P13K/Akt mediated astrocyte pathway. [Neurosci Lett. 610: 79-85.](#)
32. Amantea, D. *et al.* (2016) Azithromycin protects mice against ischemic stroke injury by promoting macrophage transition towards M2 phenotype. [Exp Neurol. 275 Pt 1: 116-25.](#)
33. Macrez, R. *et al.* (2016) Neuroendothelial NMDA receptors as therapeutic targets in experimental autoimmune encephalomyelitis. [Brain. 139 \(Pt 9\): 2406-19.](#)
34. Chen, Z.Z. *et al.* (2016) Memantine mediates neuroprotection via regulating neurovascular unit in a mouse model of focal cerebral ischemia. [Life Sci. 150: 8-14.](#)
35. Rich, M.C. *et al.* (2016) Site-targeted complement inhibition by a complement receptor 2-conjugated inhibitor (mTT30) ameliorates post-injury neuropathology in mouse brains. [Neurosci Lett. 617: 188-94.](#)
36. Werneburg, S. *et al.* (2016) Polysialylation and lipopolysaccharide-induced shedding of E-selectin ligand-1 and neuropilin-2 by microglia and THP-1 macrophages. [Glia. 64 \(8\): 1314-30.](#)
37. Amantea, D. *et al.* (2016) Neuroprotective Properties of a Macrolide Antibiotic in a Mouse Model of Middle Cerebral Artery Occlusion: Characterization of the Immunomodulatory Effects and Validation of the Efficacy of Intravenous Administration. [Assay Drug Dev Technol. 14 \(5\): 298-307.](#)
38. McCarthy, R.C. *et al.* (2016) Characterization of a novel adult murine immortalized microglial cell line and its activation by amyloid-beta. [J Neuroinflammation. 13: 21.](#)
39. Jiang, H. *et al.* (2017) Dense Intra-adipose Sympathetic Arborizations Are Essential

- for Cold-Induced Beiging of Mouse White Adipose Tissue. [Cell Metab. 26 \(4\): 686-692.e3.](#)
40. Zhang, J.C. *et al.* (2017) Prophylactic effects of sulforaphane on depression-like behavior and dendritic changes in mice after inflammation. [J Nutr Biochem. 39: 134-44.](#)
41. Petković, F. *et al.* (2017) Reduced cuprizone-induced cerebellar demyelination in mice with astrocyte-targeted production of IL-6 is associated with chronically activated, but less responsive microglia. [J Neuroimmunol. 310: 97-102.](#)
42. Martiskainen, H. *et al.* (2017) DHCR24 exerts neuroprotection upon inflammation-induced neuronal death. [J Neuroinflammation. 14 \(1\): 215.](#)
43. Olesen, M. N. *et al.* (2018) CD4 T cells react to local increase of  $\alpha$ -synuclein in a pathology-associated variant-dependent manner and modify brain microglia in absence of brain pathology [Heliyon. 4 \(1\): e00513.](#)
44. Shin, D. *et al.* (2018) Bee Venom Phospholipase A2 Alleviate House Dust Mite-Induced Atopic Dermatitis-Like Skin Lesions by the CD206 Mannose Receptor. [Toxins \(Basel\). 10 \(4\): 146.](#)
45. Dos-Santos-Pereira, M. *et al.* (2018) Microglial glutamate release evoked by  $\alpha$ -synuclein aggregates is prevented by dopamine. [Glia. 66 \(11\): 2353-2365.](#)
46. Price, B.R. *et al.* (2020) Therapeutic Trem2 activation ameliorates amyloid-beta deposition and improves cognition in the 5XFAD model of amyloid deposition. [J Neuroinflammation. 17 \(1\): 238.](#)
47. Lemaitre, D. *et al.* (2020) Collateral Sprouting of Peripheral Sensory Neurons Exhibits a Unique Transcriptomic Profile. [Mol Neurobiol. 57 \(10\): 4232-49.](#)
48. Lim, S.L. *et al.* (2020) Genetic Ablation of Hematopoietic Cell Kinase Accelerates Alzheimer's Disease-Like Neuropathology in Tg2576 Mice. [Mol Neurobiol. 57 \(5\): 2447-60.](#)
49. Paasila, P.J. *et al.* (2021) Ground state depletion microscopy as a tool for studying microglia-synapse interactions. [J Neurosci Res. 99 \(6\): 1515-32.](#)
50. Thiesler, H. *et al.* (2021) Polysialic acid and Siglec-E orchestrate negative feedback regulation of microglia activation. [Cell Mol Life Sci. 78 \(4\): 1637-53.](#)
51. Groh, J. *et al.* (2021) Immune modulation attenuates infantile neuronal ceroid lipofuscinosis in mice before and after disease onset. [Brain Commun. 3 \(2\): fcab047.](#)
52. Badr, M. *et al.* (2022) Expansion of regulatory T cells by CD28 superagonistic antibodies attenuates neurodegeneration in A53T- $\alpha$ -synuclein Parkinson's disease mice. [J Neuroinflammation. 19 \(1\): 319.](#)
53. Machado-Pereira, M. *et al.* (2022) Argonaute-2 protects the neurovascular unit from damage caused by systemic inflammation. [J Neuroinflammation. 19 \(1\): 11.](#)
54. Karikari, A.A. *et al.* (2022) Neurodegeneration by  $\alpha$ -synuclein-specific T cells in AAV-A53T- $\alpha$ -synuclein Parkinson's disease mice. [Brain Behav Immun. 101: 194-210.](#)
55. Zhao, Y. *et al.* (2022) Using Extracellular Vesicles Released by GDNF-Transfected Macrophages for Therapy of Parkinson Disease. [Cells. 11 \(12\): 1933.](#)
56. Ji, N. *et al.* (2022) VSIG4 Attenuates NLRP3 and Ameliorates Neuroinflammation via JAK2-STAT3-A20 Pathway after Intracerebral Hemorrhage in Mice. [Neurotox Res. 40 \(1\): 78-88.](#)
57. Jang, M. *et al.* (2023) Micrandilactone C, a Nortriterpenoid Isolated from Roots of Schisandra chinensis, Ameliorates Huntington's Disease by Inhibiting Microglial STAT3 Pathways [Cells. 12 \(5\): 786.](#)
58. Tseng, K.Y. *et al.* (2023) Augmenting hematoma-scavenging capacity of innate immune cells by CDNF reduces brain injury and promotes functional recovery after

- intracerebral hemorrhage. [Cell Death Dis. 14 \(2\): 128.](#)
59. Wilton, D.K. *et al.* (2023) Microglia and complement mediate early corticostriatal synapse loss and cognitive dysfunction in Huntington's disease. [Nat Med. Oct 09 \[Epub ahead of print\].](#)
60. McFleder, R.L. *et al.* (2023) Brain-to-gut trafficking of alpha-synuclein by CD11c(+) cells in a mouse model of Parkinson's disease. [Nat Commun. 14 \(1\): 7529.](#)
61. Wang, Q. *et al.* (2018) Sarm1/Myd88-5 Regulates Neuronal Intrinsic Immune Response to Traumatic Axonal Injuries. [Cell Rep. 23 \(3\): 716-24.](#)
62. Türk Börü, Ü. *et al.* (2024) Alterations in the spinal cord, trigeminal nerve ganglion, and infraorbital nerve through inducing compression of the dorsal horn region at the upper cervical cord in trigeminal neuralgia. [Brain Res. 1832: 148842.](#)
63. Amantea, D. *et al.* (2022) Ischemic Preconditioning Modulates the Peripheral Innate Immune System to Promote Anti-Inflammatory and Protective Responses in Mice Subjected to Focal Cerebral Ischemia. [Front Immunol. 13: 825834.](#)
64. Simkin, J. *et al.* (2017) Macrophages are necessary for epimorphic regeneration in African spiny mice. [Elife. 6May 16 \[Epub ahead of print\].](#)
65. Wang, X. *et al.* (2020) Acute effects of human protein S administration after traumatic brain injury in mice. [Neural Regen Res. 15 \(11\): 2073-81.](#)
66. Choi, Y. *et al.* (2025) Blood-derived APLP1(+) extracellular vesicles are potential biomarkers for the early diagnosis of brain diseases. [Sci Adv. 11 \(1\): eado6894.](#)
67. Burkhart, A. *et al.* (2024) Activation of glial cells induces proinflammatory properties in brain capillary endothelial cells *in vitro*. [Sci Rep. 14 \(1\): 26580.](#)

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**Storage** This product is shipped at ambient temperature. It is recommended to aliquot and store at -20°C on receipt. When thawed, aliquot the sample as needed. Keep aliquots at 2-8°C for short term use (up to 4 weeks) and store the remaining aliquots at -20°C.

Avoid repeated freezing and thawing as this may denature the antibody. Storage in frost-free freezers is not recommended.

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**Guarantee** 12 months from date of despatch

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**Health And Safety Information** Material Safety Datasheet documentation #10040 available at: <https://www.bio-rad-antibodies.com/SDS/MCA74GA>  
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**Regulatory** For research purposes only

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## Related Products

### Recommended Secondary Antibodies

Rabbit Anti Rat IgG (STAR16...)	<a href="#">DyLight@800</a>
Rabbit Anti Rat IgG (STAR17...)	<a href="#">FITC</a>
Goat Anti Rat IgG (STAR69...)	<a href="#">FITC</a>
Goat Anti Rat IgG (STAR73...)	<a href="#">RPE</a>
Rabbit Anti Rat IgG (STAR21...)	<a href="#">HRP</a>
Goat Anti Rat IgG (MOUSE ADSORBED) (STAR71...)	<a href="#">DyLight@550</a> , <a href="#">DyLight@650</a> , <a href="#">DyLight@800</a>

Goat Anti Rat IgG (STAR131...)

[Alk. Phos.](#), [Biotin](#)

Goat Anti Rat IgG (STAR72...)

[HRP](#)

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