

Datasheet: MCA2235A488

BATCH NUMBER 155429

Description:	RAT ANTI MOUSE CD206:Alexa Fluor® 488
Specificity:	CD206
Other names:	MANNOSE RECEPTOR C TYPE 1
Format:	ALEXA FLUOR® 488
Product Type:	Monoclonal Antibody
Clone:	MR5D3
Isotype:	IgG2a
Quantity:	100 TESTS/1ml

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.

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry (1)	▪			Neat

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 their own system using appropriate negative/positive controls.

(1) CD206 is expressed weakly at the cell surface. Staining may be increased following membrane permeabilisation. Bio-Rad recommends the use of Leucoperm™ (Product Code [BUF09](#)) for this purpose.

Target Species	Mouse		
Product Form	Purified IgG conjugated to Alexa Fluor® 488 - liquid		
Max Ex/Em	Fluorophore	Excitation Max (nm)	Emission Max (nm)
	Alexa Fluor®488	495	519
Preparation	Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant		
Buffer Solution	Phosphate buffered saline		
Preservative	0.09% Sodium Azide		

Stabilisers	1% Bovine Serum Albumin
Approx. Protein Concentrations	IgG concentration 0.05 mg/ml
Immunogen	Chimaeric CRD4-7-Fc protein
External Database Links	<p>UniProt: Q61830 Related reagents</p> <p>Entrez Gene: 17533 Mrc1 Related reagents</p>
RRID	AB_324891
Fusion Partners	Spleen cells from immunised Fischer rats were fused with cells of the Y3 myeloma cell line
Specificity	<p>Rat anti mouse CD206 antibody, clone MR5D3 recognizes the mouse mannose receptor, a ~175 kDa type 1 membrane glycoprotein that is also known as CD206. CD206 is expressed on most tissue macrophages, certain endothelial cells and <i>in vitro</i> derived dendritic cells (Zamze et al. 2002).</p> <p>The mannose receptor, CD206, is composed of a N-terminal cysteine-rich domain, a fibronectin type II domain, eight tandemly arranged C-type lectin domains (CTLD), a transmembrane domain, and a cytoplasmic domain. The terminal cysteine-rich domain binds sulfated sugars, and the CTLD recognizes carbohydrates terminating in mannose, fucose and N-acetylglucosamine, all sugars found on microorganisms and on some endogenous proteins (Su et al. 2005).</p> <p>Rat anti mouse CD206 antibody, clone MR5D3 has been reported to be non-inhibitory for the binding of the mannose receptor to carbohydrate ligands (Zamze et al. 2002). Clone MR5D3 has also been shown to work in western blotting (Martinez-Pomares et al. 2003 and Su et al. 2005).</p>
Flow Cytometry	<p>Use 10ul of the suggested working dilution to label 10⁶ cells in 100ul.</p> <p>The Fc region of monoclonal antibodies may bind non-specifically to cells expressing low affinity fc receptors. This may be reduced by using SeroBlock FcR (BUF041A/B).</p>
References	<ol style="list-style-type: none"> 1. Martinez-Pomares, L. <i>et al.</i> (2003) Analysis of mannose receptor regulation by IL-4, IL-10, and proteolytic processing using novel monoclonal antibodies. J Leukoc Biol. 73 (5): 604-13. 2. Nair, M.G. <i>et al.</i> (2009) Alternatively activated macrophage-derived RELM-α is a negative regulator of type 2 inflammation in the lung. J Exp Med. 206: 937-52. 3. Hassan, M.F. <i>et al.</i> (2006) The <i>Schistosoma mansoni</i> hepatic egg granuloma provides a favorable microenvironment for sustained growth of <i>Leishmania donovani</i>. Am J Pathol.

[169: 943-53.](#)

4. Hardison, S.E. *et al.* (2010) Interleukin-17 Is Not Required for Classical Macrophage Activation in a Pulmonary Mouse Model of *Cryptococcus neoformans* Infection. [Infect Immun. 78: 5341-51.](#)
5. Geier, H. & Celli, J. (2011) Phagocytic receptors dictate phagosomal escape and intracellular proliferation of *Francisella tularensis*. [Infect Immun. 79 \(6\): 2204-14.](#)
6. Bacci, M. *et al.* (2009) Macrophages are alternatively activated in patients with endometriosis and required for growth and vascularization of lesions in a mouse model of disease. [Am J Pathol. 175: 547-56.](#)
7. Chavele, K.M. *et al.* (2010) Mannose receptor interacts with Fc receptors and is critical for the development of crescentic glomerulonephritis in mice. [J Clin Invest. 120: 1469-78.](#)
8. deSchoolmeester, M.L. *et al.* (2009) The mannose receptor binds *Trichuris muris* excretory/secretory proteins but is not essential for protective immunity. [Immunology 126: 246-55.](#)
9. Devey, L. *et al.* (2009) Tissue-resident macrophages protect the liver from ischemia reperfusion injury via a heme oxygenase-1-dependent mechanism. [Mol Ther. 17: 65-72.](#)
10. Dewals, B.G. *et al.* (2010) IL-4R α -independent expression of mannose receptor and Ym1 by macrophages depends on their IL-10 responsiveness. [PLoS Negl Trop Dis. 4 \(5\): e689.](#)
11. Hardison, S.E. *et al.* (2010) Pulmonary infection with an interferon-gamma-producing *Cryptococcus neoformans* strain results in classical macrophage activation and protection. [Am J Pathol. 176: 774-85.](#)
12. Hawkes, C.A. *et al.* (2009) Selective targeting of perivascular macrophages for clearance of beta-amyloid in cerebral amyloid angiopathy. [Proc Natl Acad Sci USA 106: 1261-6.](#)
13. Zehner, M. *et al.* (2011) Mannose receptor polyubiquitination regulates endosomal recruitment of p97 and cytosolic antigen translocation for cross-presentation. [Proc Natl Acad Sci USA 108: 9933-8.](#)
14. Famulski, K.S. *et al.* (2010) Alternative macrophage activation-associated transcripts in T-cell-mediated rejection of mouse kidney allografts. [Am J Transplant 10 \(3\): 490-7.](#)
15. Takagi, H. *et al.* (2009) Cooperation of specific ICAM-3 grabbing nonintegrin-related 1 (SIGNR1) and complement receptor type 3 (CR3) in the uptake of oligomannose-coated liposomes by macrophages. [Glycobiology 19: 258-66.](#)
16. Deepe, G.S. Jr. & Buesing, W.R. (2011) Deciphering the Pathways of Death of *Histoplasma capsulatum*-Infected Macrophages: Implications for the Immunopathogenesis of Early Infection. [J Immunol. 188: 334-44.](#)
17. Schneider, D. *et al.* (2012) Neonatal rhinovirus infection induces mucous metaplasia and airways hyperresponsiveness. [J Immunol. 188 \(6\): 2894-904.](#)
18. Kondo, Y. *et al.* (2011) Macrophages counteract demyelination in a mouse model of globoid cell leukodystrophy. [J Neurosci. 31: 3610-24.](#)
19. Joyce, K.L. *et al.* (2012) Using eggs from *Schistosoma mansoni* as an *in vivo* model of helminth-induced lung inflammation. [J Vis Exp. Jun 5 \(64\): e3905.](#)
20. Su, Y. *et al.* (2005) Glycosylation influences the lectin activities of the macrophage mannose receptor. [J Biol Chem. 280: 32811-20.](#)
21. Verheijden, S. *et al.* (2015) Identification of a chronic non-neurodegenerative microglia activation state in a mouse model of peroxisomal β -oxidation deficiency. [Glia. 63 \(9\): 1606-20.](#)

22. O'Flaherty, B.M. *et al.* (2015) CD8+ T Cell Response to Gammaherpesvirus Infection Mediates Inflammation and Fibrosis in Interferon Gamma Receptor-Deficient Mice. [PLoS One. 10 \(8\): e0135719.](#)
23. Eßlinger M *et al.* (2016) Schizophrenia associated sensory gating deficits develop after adolescent microglia activation. [Brain Behav Immun. 58: 99-106.](#)
24. Øie, C.I. *et al.* (2016) FITC Conjugation Markedly Enhances Hepatic Clearance of N-Formyl Peptides. [PLoS One. 11 \(8\): e0160602.](#)
25. Manning, C.N. *et al.* (2015) Adipose-derived mesenchymal stromal cells modulate tendon fibroblast responses to macrophage-induced inflammation *in vitro*. [Stem Cell Res Ther. 6: 74.](#)
26. Sindrilaru, A. *et al.* (2011) An unrestrained proinflammatory M1 macrophage population induced by iron impairs wound healing in humans and mice. [J Clin Invest. 121: 985-97.](#)
27. Bongiorno, E.K. *et al.* (2017) Type 1 Immune Mechanisms Driven by the Response to Infection with Attenuated Rabies Virus Result in Changes in the Immune Bias of the Tumor Microenvironment and Necrosis of Mouse GL261 Brain Tumors. [J Immunol. 198 \(11\): 4513-23.](#)
28. Braune, J. *et al.* (2017) IL-6 Regulates M2 Polarization and Local Proliferation of Adipose Tissue Macrophages in Obesity. [J Immunol. 198 \(7\): 2927-34.](#)
29. Litvack ML *et al.* (2016) Alveolar-like Stem Cell-derived Myb(-) Macrophages Promote Recovery and Survival in Airway Disease. [Am J Respir Crit Care Med. 193 \(11\): 1219-29.](#)
30. Sameshima, A. *et al.* (2015) Teneligliptin improves metabolic abnormalities in a mouse model of postmenopausal obesity. [J Endocrinol. 227 \(1\): 25-36.](#)
31. Eskilsson, A. *et al.* (2014) Distribution of microsomal prostaglandin E synthase-1 in the mouse brain. [J Comp Neurol. 522 \(14\): 3229-44.](#)
32. Hosono, K. *et al.* (2016) Signaling of Prostaglandin E Receptors, EP3 and EP4 Facilitates Wound Healing and Lymphangiogenesis with Enhanced Recruitment of M2 Macrophages in Mice. [PLoS One. 11 \(10\): e0162532.](#)
33. Han, Y.H. *et al.* (2019) A maresin 1/ROR α /12-lipoxygenase autoregulatory circuit prevents inflammation and progression of nonalcoholic steatohepatitis. [J Clin Invest. 130. pii: 124219](#)
34. Rahman, K. *et al.* (2017) Inflammatory Ly6Chi monocytes and their conversion to M2 macrophages drive atherosclerosis regression. [J Clin Invest. 127 \(8\): 2904-2915.](#)
35. Qiao, X. *et al.* (2020) Magnesium-doped Nanostructured Titanium Surface Modulates Macrophage-mediated Inflammatory Response for Ameliorative Osseointegration. [Int J Nanomedicine. 15: 7185-98.](#)
36. Shiau, D.J. *et al.* (2020) Hepatocellular carcinoma-derived high mobility group box 1 triggers M2 macrophage polarization via a TLR2/NOX2/autophagy axis. [Sci Rep. 10 \(1\): 13582.](#)
37. Fan, A. *et al.* (2020) High-salt diet decreases mechanical thresholds in mice that is mediated by a CCR2-dependent mechanism. [J Neuroinflammation. 17 \(1\): 179.](#)
38. Kalovyryna, N. *et al.* (2020) A 3'UTR modification of the TNF- α mouse gene increases peripheral TNF- α and modulates the Alzheimer-like phenotype in 5XFAD mice. [Sci Rep. 10 \(1\): 8670.](#)
39. Kishimoto, S. *et al.* (2020) Surgical Injury and Ischemia Prime the Adipose Stromal Vascular Fraction and Increase Angiogenic Capacity in a Mouse Limb Ischemia Model. [Stem Cells Int. 2020: 7219149.](#)

40. Espagnol, N. *et al.* (2014) Specific Inhibition of the VEGFR-3 Tyrosine Kinase by SAR131675 Reduces Peripheral and Tumor Associated Immunosuppressive Myeloid Cells. [Cancers \(Basel\). 6 \(1\): 472-90.](#)
41. Fridlender, Z.G. *et al.* (2013) Using macrophage activation to augment immunotherapy of established tumours. [Br J Cancer. 108 \(6\): 1288-97.](#)

Storage

Store at +4°C or at -20°C if preferred.

This product should be stored undiluted.

Storage in frost-free freezers is not recommended. This product is photosensitive and should be protected from light.

Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.

Guarantee

12 months from date of despatch

Acknowledgements

This product is provided under an intellectual property licence from Life Technologies Corporation. The transfer of this product is contingent on the buyer using the purchase product solely in research, excluding contract research or any fee for service research, and the buyer must not sell or otherwise transfer this product or its components for (a) diagnostic, therapeutic or prophylactic purposes; (b) testing, analysis or screening services, or information in return for compensation on a per-test basis; (c) manufacturing or quality assurance or quality control, or (d) resale, whether or not resold for use in research. For information on purchasing a license to this product for purposes other than as described above, contact Life Technologies Corporation, 5791 Van Allen Way, Carlsbad CA 92008 USA or outlicensing@thermofisher.com

Health And Safety Information

Material Safety Datasheet documentation #10041 available at: <https://www.bio-rad-antibodies.com/SDS/MCA2235A488>
10041

Regulatory

For research purposes only

Related Products

Recommended Negative Controls

[RAT IgG2a NEGATIVE CONTROL:Alexa Fluor® 488 \(MCA1212A488\)](#)

North & South America

Tel: +1 800 265 7376

Fax: +1 919 878 3751

Email: antibody_sales_us@bio-rad.com

Worldwide

Tel: +44 (0)1865 852 700

Fax: +44 (0)1865 852 739

Email: antibody_sales_uk@bio-rad.com

Europe

Tel: +49 (0) 89 8090 95 21

Fax: +49 (0) 89 8090 95 50

Email: antibody_sales_de@bio-rad.com

To find a batch/lot specific datasheet for this product, please use our online search tool at: [bio-rad-antibodies.com/datasheets](https://www.bio-rad-antibodies.com/datasheets)
'M366385:200529'

Printed on 21 Mar 2024