Datasheet: MCA2235EL

Description:	RAT ANTI MOUSE CD206:Low Endotoxin
Specificity:	CD206
Other names:	MANNOSE RECEPTOR C TYPE 1
Format:	Low Endotoxin
Product Type:	Monoclonal Antibody
Clone:	MR5D3
Isotype:	IgG2a
Quantity:	0.5 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.

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

Where this product 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 product for use in 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 - liquid
Preparation	Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant
Buffer Solution	Phosphate buffered saline
Preservative Stabilisers	None Present
Carrier Free	Yes
Endotoxin Level	<0.01EU/ug

Approx. Protein Concentrations	IgG concentration 1.0 mg/ml
Immunogen	Chimaeric CRD4-7-Fc protein
External Database Links	**UniProt:** Q61830 Related reagents **Entrez Gene:** 17533 Mrc1 Related reagents
Fusion Partners	Spleen cells from immunised Fischer rats were fused with cells of the Y3 myeloma cell line
Specificity	**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 *in vitro* derived dendritic cells (Zamze *et al.* 2002). 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). 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 Blot (Martinez-Pomares *et al.* 2003 and Su *et al.* 2005).
Flow Cytometry	Use 10ul of the suggested working dilution to label 10^6 cell in 100ul.
References	1. Martinez-Pomares, L. *et al.* (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. Zamze, S. *et al.* (2002) Recognition of bacterial capsular polysaccharides and lipopolysaccharides by the macrophage mannose receptor. J Biol Chem. 277 (44): 41613-23. 3. Hassan, M.F. *et al.* (2006) The *Schistosoma mansoni* hepatic egg granuloma provides a favorable microenvironment for sustained growth of *Leishmania donovani.* 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-4Ralpha-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 USA106: 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. May 25. pii: S0889-1591(16): 30139-8. [Epub ahead of print]
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. Malada-Edelstein, Y.F. *et al.* (2017) Regulatory role of cytosolic phospholipase A_2 alpha in the induction of CD40 in microglia. J Neuroinflammation. 14 (1): 33.
27. Braune, J. *et al.* (2017) IL-6 Regulates M2 Polarization and Local Proliferation of Adipose Tissue Macrophages in Obesity. J Immunol. Feb 13. pii: 1600476. [Epub ahead of print]
28. 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. May 1. pii: 1601444. [Epub ahead of print]
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.

Storage	Store at -20ºC only. This product should be stored undiluted. Storage in frost-free freezers is not recommended. Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.
Shelf Life	18 months from date of despatch.
Health And Safety Information	Material Safety Datasheet documentation #10162 available at: 10162: https://www.bio-rad-antibodies.com/uploads/MSDS/10162.pdf
Regulatory	For research purposes only

Related Products

Recommended Secondary Antibodies

Rabbit Anti Rat IgG (STAR16...)	DyLight®800
Goat Anti Rat IgG (STAR73...)	RPE
Rabbit Anti Rat IgG (STAR21...)	HRP
Rabbit Anti Rat IgG (STAR17...)	FITC
Goat Anti Rat IgG (MOUSE ADSORBED) (STAR71...)	DyLight®649, DyLight®800
Goat Anti Rat IgG (STAR131...)	Alk. Phos., Biotin
Goat Anti Rat IgG (STAR69...)	FITC
Goat Anti Rat IgG (STAR72...)	HRP

Recommended Negative Controls

RAT IgG2a NEGATIVE CONTROL:Low Endotoxin (MCA1212EL)

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

'M318524:180718'

Printed on 01 Aug 2018