

Datasheet: MCA2392

Description:	RAT ANTI MOUSE CD301
Specificity:	CD301
Other names:	MACROPHAGE GALACTOSE SPECIFIC LECTIN
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	ER-MP23
Isotype:	IgG2a
Quantity:	0.25 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	▪			1/100 - 1/200
Immunohistology - Frozen	▪			
Immunohistology - Paraffin (1)	▪			
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)Heat mediated antigen retrieval is required prior to staining paraffin-embedded sections with this antibody. Bio-Rad recommend citrate buffer, pH6.0, 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	0.09% sodium azide (NaN ₃)
Carrier Free	Yes
Approx. Protein Concentrations	IgG concentration 1.0 mg/ml
Immunogen	Balb/c macrophage precursor cell hybrids.
RRID	AB_872014
Fusion Partners	Cells from immunized rats were fused with cells of the rat Y3-Ag1.2.3 myeloma cell line.
Specificity	<p>Rat anti Mouse CD301 antibody, clone ER-MP23 recognizes murine CD301, a ~38 kDa cell surface protein, otherwise known as macrophage galactose N-acetylgalactosamine lectin (MGL) or dendritic cell asialoglycoprotein (DC-ASGPR).</p> <p>In mice, CD301 is predominantly expressed on mature macrophages found associated with a wide range of connective tissues including macrophages in the dermis and the pancreas. Clone ER-MP23 also detects a population of dendritic cells in lymphoid tissue, which are probably recent immigrants from peripheral connective tissue sites. Expression of CD301 is induced by alternative (i.e. IL-4/IL-13 mediated) activation of macrophages and dendritic cells, but not all CD301 positive cells are necessarily IL-4/IL-13 stimulated.</p> <p>Rat anti Mouse CD301 antibody, clone ER-MP23 is reported to block the function of mouse CD301 (Dupasquier et al. 2006). Rat anti Mouse CD301 antibody, clone ER-MP23 binds both MGL1 and MGL2 homologues.</p>
Flow Cytometry	Use 10µl of the suggested working dilution to label 10 ⁶ cells in 100µl
References	<ol style="list-style-type: none"> 1. Leenen, P.J <i>et al.</i> (1994) Markers of mouse macrophage development detected by monoclonal antibodies. J Immunol Methods. 174 (1-2): 5-19. 2. Geutskens, S.B. <i>et al.</i> (2005) Macrophages in the murine pancreas and their involvement in fetal endocrine development <i>in vitro</i>. J Leukoc Biol. 78 (4): 845-52. 3. Abadie, V. <i>et al.</i> (2005) Neutrophils rapidly migrate via lymphatics after <i>Mycobacterium bovis</i> BCG intradermal vaccination and shuttle live bacilli to the draining lymph nodes. Blood. 106: 1843-50. 4. Dupasquier, M. <i>et al.</i> (2004) Macrophages and dendritic cells constitute a major subpopulation of cells in the mouse dermis. J Invest Dermatol. 123: 876-9. 5. Sindrilaru, A. <i>et al.</i> (2011) An unrestrained proinflammatory M1 macrophage population induced by iron impairs wound healing in humans and mice. J Clin Invest. 121: 985-97. 6. Westcott, D.J. <i>et al.</i> (2009) MGL1 promotes adipose tissue inflammation and insulin resistance by regulating 7/4hi monocytes in obesity. J Exp Med. 206: 3143-56. 7. Fischer-Posovszky, P. <i>et al.</i> (2011) Targeted deletion of adipocytes by apoptosis leads to adipose tissue recruitment of alternatively activated m2 macrophages. Endocrinology.

[152: 3074-81.](#)

8. Spite, M. *et al.* (2011) Deficiency of the Leukotriene B4 Receptor, BLT-1, Protects against Systemic Insulin Resistance in Diet-Induced Obesity. [J Immunol. 187: 1942-9.](#)
9. Raes, G. *et al.* (2005) Macrophage galactose-type C-type lectins as novel markers for alternatively activated macrophages elicited by parasitic infections and allergic airway inflammation. [J Leukoc Biol. 77: 321-7.](#)
10. Freire, T. *et al.* (2010) Glycosidic Tn-based vaccines targeting dermal dendritic cells favor germinal center B-cell development and potent antibody response in the absence of adjuvant. [Blood. 116: 3526-36.](#)
11. Blyszczuk, P. *et al.* (2013) Nitric oxide synthase 2 is required for conversion of pro-fibrogenic inflammatory CD133(+) progenitors into F4/80(+) macrophages in experimental autoimmune myocarditis. [Cardiovasc Res. 97 \(2\): 219-29.](#)
12. Ferret-Bernard, S. *et al.* (2012) Plasma membrane proteomes of differentially matured dendritic cells identified by LC-MS/MS combined with iTRAQ labelling. [J. Proteomics. 75: 938-48.](#)
13. Orr, J.S. *et al.* (2012) Toll-like Receptor 4 Deficiency Promotes the Alternative Activation of Adipose Tissue Macrophages. [Diabetes. 61: 2718-27.](#)
14. Wagner, M. *et al.* (2012) Inflamed tumor-associated adipose tissue is a depot for macrophages that stimulate tumor growth and angiogenesis. [Angiogenesis. 15: 481-95](#)
15. Dib, L.H. *et al.* (2014) Bone marrow leptin signaling mediates obesity-associated adipose tissue inflammation in male mice. [Endocrinology. 155: 40-6.](#)
16. Morris, M.E. *et al.* (2015) Systemically Delivered Adipose Stromal Vascular Fraction Cells Disseminate to Peripheral Artery Walls and Reduce Vasomotor Tone Through a CD11b+ Cell-Dependent Mechanism. [Stem Cells Transl Med. pii: sctm.2014-0252.](#)
17. Vukman KV *et al.* (2013) Mannose receptor and macrophage galactose-type lectin are involved in *Bordetella pertussis* mast cell interaction. [J Leukoc Biol. 94 \(3\): 439-48.](#)
18. Shah, R. *et al.* (2015) Metabolic Effects of CX3CR1 Deficiency in Diet-Induced Obese Mice. [PLoS One. 10 \(9\): e0138317.](#)
19. Hartwig, H. *et al.* (2015) Atherosclerotic Plaque Destabilization in Mice: A Comparative Study. [PLoS One. 10 \(10\): e0141019.](#)
20. Dupasquier, M. *et al.* (2006) The dermal microenvironment induces the expression of the alternative activation marker CD301/mMGL in mononuclear phagocytes, independent of IL-4/IL-13 signaling. [J Leukoc Biol. 80 \(4\): 838-49.](#)
21. Hanot Mambres, D. *et al.* (2015) *In Situ* Characterization of Splenic *Brucella melitensis* Reservoir Cells during the Chronic Phase of Infection in Susceptible Mice. [PLoS One. 10 \(9\): e0137835.](#)
22. Everts B *et al.* (2016) Migratory CD103+ dendritic cells suppress helminth-driven type 2 immunity through constitutive expression of IL-12. [J Exp Med. 213 \(1\): 35-51.](#)
23. Bartneck, M. *et al.* (2016) Histidine-rich glycoprotein promotes macrophage activation and inflammation in chronic liver disease. [Hepatology. 63 \(4\): 1310-24.](#)
24. Jha, A.K. *et al.* (2015) Network integration of parallel metabolic and transcriptional data reveals metabolic modules that regulate macrophage polarization. [Immunity. 42 \(3\): 419-30.](#)
25. Hellmann, J. *et al.* (2016) CCR7 Maintains Nonresolving Lymph Node and Adipose Inflammation in Obesity. [Diabetes. 65 \(8\): 2268-81.](#)
26. 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.](#)

27. 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.](#)

28. Zhang, H. *et al.* (2017) Synergistic Modulation of Inflammatory but not Metabolic Effects of High-Fat Feeding by CCR2 and CX3CR1. [Obesity \(Silver Spring\). 25 \(8\): 1410-20.](#)

29. Wagner, M. *et al.* (2019) Blockade of Lymphangiogenesis Shapes Tumor-Promoting Adipose Tissue Inflammation. [Am J Pathol. Jul 29 \[Epub ahead of print\].](#)

30. Shimobayashi, M. *et al.* (2018) Insulin resistance causes inflammation in adipose tissue. [J Clin Invest. 128 \(4\): 1538-50.](#)

31. Baardman, J. *et al.* (2020) Macrophage ATP citrate lyase deficiency stabilizes atherosclerotic plaques. [Nat Commun. 11 \(1\): 6296.](#)

32. De La Cruz, A. *et al.* (2021) Platelet and Erythrocyte Extravasation across Inflamed Corneal Venules Depend on CD18, Neutrophils, and Mast Cell Degranulation. [Int J Mol Sci. 22 \(14\)Jul 08 \[Epub ahead of print\].](#)

33. Lindhorst, A. *et al.* (2021) Adipocyte death triggers a pro-inflammatory response and induces metabolic activation of resident macrophages. [Cell Death Dis. 12 \(6\): 579.](#)

34. Huang, Y. *et al.* (2023) A pref-1-controlled non-inflammatory mechanism of insulin resistance. [iScience26,106923](#)

35. Rigoni, T.S. *et al.* (2020) RANK Ligand Helps Immunity to Leishmania major by Skewing M2-Like Into M1 Macrophages. [Front Immunol. 11: 886.](#)

36. Xavier, M.N. *et al.* (2013) PPAR γ -mediated increase in glucose availability sustains chronic *Brucella abortus* infection in alternatively activated macrophages. [Cell Host Microbe. 14 \(2\): 159-70.](#)

37. Hsu, S.N. *et al.* (2022) Increased PHOSPHO1 expression mediates cortical bone mineral density in renal osteodystrophy. [J Endocrinol. 254 \(3\): 153-67.](#)

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.

Guarantee

12 months from date of despatch

Health And Safety Information

Material Safety Datasheet documentation #10040 available at: <https://www.bio-rad-antibodies.com/SDS/MCA2392>
10040

Regulatory

For research purposes only

Related Products

Recommended Secondary Antibodies

Rabbit Anti Rat IgG (STAR16...)

[DyLight@800](#)

Rabbit Anti Rat IgG (STAR17...)

[FITC](#)

Goat Anti Rat IgG (STAR69...)	FITC
Goat Anti Rat IgG (STAR73...)	RPE
Rabbit Anti Rat IgG (STAR21...)	HRP
Goat Anti Rat IgG (MOUSE ADSORBED) (STAR71...)	DyLight@550 , DyLight@650 , DyLight@800
Goat Anti Rat IgG (STAR131...)	Alk. Phos. , Biotin
Goat Anti Rat IgG (STAR72...)	HRP

Recommended Negative Controls

[RAT IgG2a NEGATIVE CONTROL \(MCA1212\)](#)

Recommended Useful Reagents

[ANTIGEN RETRIEVAL BUFFER, pH8.0 \(BUF025A\)](#)

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