

Datasheet: MCA341F

Description:	MOUSE ANTI RAT CD68:FITC
Specificity:	CD68
Other names:	ED1, MACROSIALIN
Format:	FITC
Product Type:	Monoclonal Antibody
Clone:	ED1
Isotype:	IgG1
Quantity:	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.

	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 in their own system using appropriate negative/positive controls.

(1) **Membrane permeabilisation is required for this application. Bio-Rad recommends the use of Leucoperm™ (Product Code [BUF09](#)) for this purpose.**

Target Species	Rat								
Species Cross Reactivity	Reacts with: Bovine Does not react with: Horse N.B. Antibody reactivity and working conditions may vary between species.								
Product Form	Purified IgG conjugated to Fluorescein Isothiocyanate Isomer 1 (FITC) - liquid								
Max Ex/Em	<table border="1"> <thead> <tr> <th>Fluorophore</th> <th>Excitation Max (nm)</th> <th>Emission Max (nm)</th> </tr> </thead> <tbody> <tr> <td>FITC</td> <td>490</td> <td>525</td> </tr> </tbody> </table>	Fluorophore	Excitation Max (nm)	Emission Max (nm)	FITC	490	525		
Fluorophore	Excitation Max (nm)	Emission Max (nm)							
FITC	490	525							
Preparation	Purified IgG prepared by affinity chromatography on Protein A from tissue culture supernatant								
Buffer Solution	Phosphate buffered saline								
Preservative Stabilisers	0.09% Sodium Azide 1% Bovine Serum Albumin								
Approx. Protein Concentrations	IgG concentration 0.1 mg/ml								

Immunogen	Rat spleen cells
External Database Links	UniProt: Q4FZY1 Related reagents
Fusion Partners	Spleen cells from immunised BALB/c mice were fused with cells of the SP2/0-Ag14 mouse myeloma cell line.
Specificity	<p>Mouse anti rat CD68, clone ED1 recognizes the rat ED1 antigen, a heavily glycosylated protein of ~90 -110 KDa, also known as rat CD68 (Dijkstra et al. 1985).</p> <p>The ED1 antigen is expressed on most macrophages populations, as well as on monocytes and is considered as a pan-macrophage marker in the rat (Damoiseaux et al. 1994). ED1 is expressed predominantly on the lysosomal membrane and lightly on the cell surface (Dijkstra et al. 1985).</p> <p>The expression of ED1 antigen being predominantly cytoplasmic (Dijkstra et al. 1985), flow cytometry results are improved by the use of a membrane permeabilization procedure, such as Leucoperm, prior to staining.</p>
Flow Cytometry	Use 10ul of the suggested working dilution to label 10 ⁶ cells in 100ul.
References	<ol style="list-style-type: none"> Damoiseaux, J.G. <i>et al.</i> (1994) Rat macrophage lysosomal membrane antigen recognised by monoclonal antibody ED1. Immunol. 83: 140-147. Bauer, J. <i>et al.</i> (1994) Phagocytic activity of macrophages and microglial cells during the course of Acute and Chronic Relapsing Experimental Autoimmune Encephalomyelitis. J. Neurosci. Res. 38: 365-375. Bao, F. <i>et al.</i> (2004) Early anti-inflammatory treatment reduces lipid peroxidation and protein nitration after spinal cord injury in rats. J. Neuro-chem. 88:1335-1344. Zilka, N. <i>et al.</i> (2009) Human misfolded truncated tau protein promotes activation of microglia and leukocyte infiltration in the transgenic rat model of tauopathy. J. Neuroimmunol. 209: 16-25. Fujita, E. <i>et al.</i> (2010) Statin attenuates experimental anti-glomerular basement membrane glomerulonephritis together with the augmentation of alternatively activated macrophages. Am J Pathol. 177 (3): 1143-54. Salegio, E.A. <i>et al.</i> (2011) Macrophage presence is essential for the regeneration of ascending afferent fibres following a conditioning sciatic nerve lesion in adult rats. BMC Neurosci. 12: 11. Wei, X. <i>et al.</i> (2014) Dural fibroblasts play a potential role in headache pathophysiology. Pain. 155: 1238-44. Naito, Y. <i>et al.</i> (2011) Dietary iron restriction prevents hypertensive cardiovascular remodeling in dahl salt-sensitive rats. Hypertension. 57: 497-504. Baker, S.C. <i>et al.</i> (2011) Cellular integration and vascularisation promoted by a resorbable, particulate-leached, cross-linked poly(ε-caprolactone) scaffold. Macromol Biosci. 11 (5): 618-27. Bedi, A. <i>et al.</i> (2010) Effect of early and delayed mechanical loading on tendon-to-bone healing after anterior cruciate ligament reconstruction. J Bone Joint Surg Am. 92: 2387-401. Liew, H.K. <i>et al.</i> (2012) Systemic administration of urocortin after intracerebral hemorrhage reduces neurological deficits and neuroinflammation in rats. J Neuroinflammation. 9: 13. Chiu, T.L. <i>et al.</i> (2012) The treatment of glioblastoma multiforme through activation of microglia and TRAIL induced by rAAV2-mediated IL-12 in a syngeneic rat model. J Biomed Sci. 19: 45. Glorie, L.L. <i>et al.</i> (2012) DPP4 inhibition improves functional outcome after renal ischemia-reperfusion injury. Am J Physiol Renal Physiol. 303: F681-8. Quan, L.D. <i>et al.</i> (2010) Development of a macromolecular prodrug for the treatment of inflammatory arthritis: mechanisms involved in arthrotropism and sustained therapeutic efficacy. Arthritis Res Ther.12: R170.

15. Peng, J.H. *et al.* (2012) Effects of Puerariae Radix Extract on Endotoxin Receptors and TNF- α Expression Induced by Gut-Derived Endotoxin in Chronic Alcoholic Liver Injury. [Evid Based Complement Alternat Med. 2012: 234987.](#)
16. Matsuda, K. *et al.* (2010) Hemophagocytic histiocytic sarcoma in a Japanese black cow. [Vet Pathol. 47: 339-42.](#)
17. Tian, Y.F. *et al.* (2013) Lipoic acid suppresses portal endotoxemia-induced steatohepatitis and pancreatic inflammation in rats. [World J Gastroenterol. 19 \(18\): 2761-71.](#)
18. Xiang, Y. *et al.* (2013) L-carnitine protects against cyclosporine-induced pancreatic and renal injury in rats. [Transplant Proc. 45 \(8\): 3127-34.](#)
19. Wang-Rosenke, Y. *et al.* (2013) Tyrosine kinases inhibition by Imatinib slows progression in chronic anti-thy1 glomerulosclerosis of the rat. [BMC Nephrol. 14: 223.](#)
20. Dort, J. *et al.* (2013) Beneficial Effects of Cod Protein on Inflammatory Cell Accumulation in Rat Skeletal Muscle after Injury Are Driven by Its High Levels of Arginine, Glycine, Taurine and Lysine. [PLoS One. 8: e77274.](#)
21. Chang, C.Y. *et al.* (2013) Docosahexaenoic acid reduces cellular inflammatory response following permanent focal cerebral ischemia in rats. [J Nutr Biochem. 24 \(12\): 2127-37.](#)
22. Machelska, H. *et al.* (2004) Selectins and integrins but not platelet-endothelial cell adhesion molecule-1 regulate opioid inhibition of inflammatory pain. [Br J Pharmacol. 142 \(4\): 772-80.](#)
23. Sakuraya, K. *et al.* (2014) The synergistic effect of mizoribine and a direct renin inhibitor, aliskiren, on unilateral ureteral obstruction induced renal fibrosis in rats. [J Urol. 191 \(4\): 1139-46.](#)
24. Xu, X. *et al.* (2014) Aging aggravates long-term renal ischemia-reperfusion injury in a rat model. [J Surg Res. 187 \(1\): 289-96.](#)
25. Kim, Y.H. *et al.* (2014) Enhancement of bone regeneration by dual release of a macrophage recruitment agent and platelet-rich plasma from gelatin hydrogels. [Biomaterials. 35 \(1\): 214-24.](#)
26. Lin, Y.C. *et al.* (2015) Time-course effect of electrical stimulation on nerve regeneration of diabetic rats. [PLoS One. 10: e0116711.](#)
27. Matsuda, K. *et al.* (2009) Two cases of bovine sarcoma in clinically long-standing lesions. [J Vet Med Sci. 71 \(2\): 221-4.](#)
28. Thieme, K. & Oliveira-Souza, M. (2015) Renal Hemodynamic and Morphological Changes after 7 and 28 Days of Leptin Treatment: The Participation of Angiotensin II via the AT1 Receptor. [PLoS One. 10 \(3\): e0122265.](#)
29. Ayoub, M.A. *et al.* (2015) Functional Interaction between Angiotensin II Receptor Type 1 and Chemokine (C-C Motif) Receptor 2 with Implications for Chronic Kidney Disease. [PLoS One. 10 \(3\): e0119803.](#)
30. Bijarnia, R.K. *et al.* (2015) Sodium thiosulfate ameliorates oxidative stress and preserves renal function in hyperoxaluric rats. [PLoS One. 10 \(4\): e0124881.](#)
31. Oboshi, M. *et al.* (2015) Temporary dietary iron restriction affects the process of thrombus resolution in a rat model of deep vein thrombosis. [PLoS One. 10 \(5\): e0126611.](#)
32. Nagai, H. *et al.* (2015) Pulmonary Macrophages Attenuate Hypoxic Pulmonary Vasoconstriction via β 3AR/iNOS Pathway in Rats Exposed to Chronic Intermittent Hypoxia. [PLoS One. 10 \(7\): e0131923.](#)
33. Adamo, H.H. *et al.* (2015) Adaptive (TINT) Changes in the Tumor Bearing Organ Are Related to Prostate Tumor Size and Aggressiveness. [PLoS One. 10 \(11\): e0141601.](#)
34. Paulsen, I.M.S. *et al.* (2015) A single simple procedure for dewaxing, hydration and heat-induced epitope retrieval (HIER) for immunohistochemistry in formalin fixed paraffin-embedded tissue. [European Journal of Histochemistry. 59 \(4\): 2532-9.](#)
35. Ibarra, V. *et al.* (2016) Evaluation of the Tissue Response to Alginate Encapsulated Islets in an Omentum Pouch Model. [J Biomed Mater Res A. May 3. \[Epub ahead of print\]](#)
36. Zeka, B. *et al.* (2016) Aquaporin 4-specific T cells and NMO-IgG cause primary retinal damage in experimental NMO/SD. [Acta Neuropathol Commun. 4 \(1\): 82.](#)
37. Xu K *et al.* (2016) Expression of aryl hydrocarbon receptor in rat brain lesions following traumatic brain injury. [Diagn Pathol. 11 \(1\): 72.](#)
38. Gällentoft, L. *et al.* (2016) Impact of degradable nanowires on long-term brain tissue responses.

[J Nanobiotechnology. 14 \(1\): 64.](#)

39. C6ndor JM *et al.* (2016) Treatment With Human Wharton's Jelly-Derived Mesenchymal Stem Cells Attenuates Sepsis-Induced Kidney Injury, Liver Injury, and Endothelial Dysfunction. [Stem Cells Transl Med. 5 \(8\): 1048-57.](#)
40. Herold, S. *et al.* (2016) CatWalk gait analysis in a rat model of multiple sclerosis. [BMC Neurosci. 17 \(1\): 78.](#)
41. Szmydynger-Chodobska, J. *et al.* (2016) The Involvement of Pial Microvessels in Leukocyte Invasion after Mild Traumatic Brain Injury. [PLoS One. 11 \(12\): e0167677.](#)
42. Hashmat, S. *et al.* (2016) Interleukin-6 inhibition attenuates hypertension and associated renal damage in Dahl salt-sensitive rats. [Am J Physiol Renal Physiol. 311 \(3\): F555-61.](#)
43. Cha, S.J. *et al.* (2016) Identification of GAPDH on the surface of *Plasmodium* sporozoites as a new candidate for targeting malaria liver invasion. [J Exp Med. 213 \(10\): 2099-112.](#)
44. Murata, M. *et al.* (2016) Surfactant protein D is a useful biomarker for monitoring acute lung injury in rats. [Exp Lung Res. 42 \(6\): 314-21.](#)
45. Faleiros, C.M. *et al.* (2016) Effects of previous physical training on adriamycin nephropathy and its relationship with endothelial lesions and angiogenesis in the renal cortex. [Life Sci. pii: S0024-3205\(16\)30665-8. \[Epub ahead of print\]](#)
46. Haba, D. *et al.* (2017) Morphological study on the pressure ulcer-like dermal lesions formed in the rat heel skin after transection of the sciatic nerves. [Acta Histochem. 119 \(1\): 39-47.](#)
47. Landeck, N. *et al.* (2016) Toxic effects of human and rodent variants of alpha-synuclein *in vivo*. [Eur J Neurosci. Nov 28. \[Epub ahead of print\]](#)
48. Carrillo-de Sauvage MA *et al.* (2015) The neuroprotective agent CNTF decreases neuronal metabolites in the rat striatum: an *in vivo* multimodal magnetic resonance imaging study. [J Cereb Blood Flow Metab. 35 \(6\): 917-21.](#)
49. Chang, C.Y. *et al.* (2015) Tetramethylpyrazine inhibits neutrophil activation following permanent cerebral ischemia in rats. [Biochem Biophys Res Commun. 463 \(3\): 421-7.](#)
50. Londono, R. *et al.* (2017) The Effect of Cell Debris within Biologic Scaffolds upon the Macrophage Response. [J Biomed Mater Res A. Mar 6. \[Epub ahead of print\]](#)
51. Xue, Y. *et al.* (2017) Hydroxyapatite nanoparticle-induced mitochondrial energy metabolism impairment in liver cells: *in vitro* and *in vivo* studies. [J Appl Toxicol. Mar 6. \[Epub ahead of print\]](#)
52. Wang, M. *et al.* (2017) Characterization of the Micro-Environment of the Testis that Shapes the Phenotype and Function of Testicular Macrophages. [J Immunol. May 1. pii: 1700162. \[Epub ahead of print\]](#)
53. Menzies, R.I. *et al.* (2015) Inhibition of the purinergic P2X7 receptor improves renal perfusion in angiotensin-II-infused rats. [Kidney Int. 88 \(5\): 1079-87.](#)
54. Aarts, S.A.B.M. *et al.* (2017) Inhibition of CD40-TRAF6 interactions by the small molecule inhibitor 6877002 reduces neuroinflammation. [J Neuroinflammation. 14 \(1\): 105.](#)
55. Han, T.T. *et al.* (2015) Adipose-derived stromal cells mediate *in vivo* adipogenesis, angiogenesis and inflammation in decellularized adipose tissue bioscaffolds. [Biomaterials. 72: 125-37.](#)
56. Kanamori, H. *et al.* (2017) Influence of nicotine on choline-deficient, L-amino acid-defined diet-induced non-alcoholic steatohepatitis in rats. [PLoS One. 12 \(6\): e0180475.](#)
57. K6hne, L. *et al.* (2017) Renal allograft rejection, lymphocyte infiltration, and *de novo* donor-specific antibodies in a novel model of non-adherence to immunosuppressive therapy. [BMC Immunol. 18 \(1\): 52.](#)

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.

Shelf Life	18 months from date of despatch.
-------------------	----------------------------------

Health And Safety Information	Material Safety Datasheet documentation #10041 available at: 10041: https://www.bio-rad-antibodies.com/uploads/MSDS/10041.pdf
--------------------------------------	--

Regulatory	For research purposes only
-------------------	----------------------------

Related Products

Recommended Negative Controls

[MOUSE IgG1 NEGATIVE CONTROL:FITC \(MCA1209F\)](#)

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
----------------------------------	---	------------------	---	---------------	---

'M301740:170109'

Printed on 20 Jun 2018

© 2018 Bio-Rad Laboratories Inc | [Legal](#) | [Imprint](#)