

## Datasheet: MCA2388A647

<b>Description:</b>	RAT ANTI MOUSE CD31:Alexa Fluor® 647
<b>Specificity:</b>	CD31
<b>Other names:</b>	PECAM-1
<b>Format:</b>	ALEXA FLUOR® 647
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	ER-MP12
<b>Isotype:</b>	IgG2a
<b>Quantity:</b>	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](http://www.bio-rad-antibodies.com/protocols).

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	▪			Neat - 1/10

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.

<b>Target Species</b>	Mouse		
<b>Product Form</b>	Purified IgG conjugated to Alexa Fluor®647- liquid		
<b>Max Ex/Em</b>	<b>Fluorophore</b>	<b>Excitation Max (nm)</b>	<b>Emission Max (nm)</b>
	Alexa Fluor®647	650	665
<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		
	1%	Bovine Serum Albumin	
<b>Approx. Protein Concentrations</b>	IgG concentration 0.05 mg/ml		

<b>Immunogen</b>	BALB/c macrophage precursor cell hybrids
<b>External Database Links</b>	<p><b>UniProt:</b>  <a href="#">Q08481</a>    <a href="#">Related reagents</a></p> <p><b>Entrez Gene:</b>  <a href="#">18613</a> Pecam1    <a href="#">Related reagents</a></p>
<b>Synonyms</b>	Pecam, Pecam-1
<b>RRID</b>	AB_1604768
<b>Fusion Partners</b>	Cells from immunised rats were fused with the cells of the rat Y3-Ag1.2.3 myeloma cell line
<b>Specificity</b>	<p><b>Rat anti Mouse CD31 antibody, clone ER-MP12</b> recognizes mouse CD31, a 140 kDa cell surface glycoprotein expressed at high levels on endothelial cells, platelets and most leukocyte subpopulations.</p> <p>CD31 is also expressed on a major population of macrophage / dendritic cell precursors in the bone marrow. Rat anti Mouse CD31 antibody, clone ER-MP12 can be used in conjunction with clone ER-MP20 (<a href="#">MCA2389GA</a>) in two colour flow cytometric analysis, to identify different stages of myeloid progenitor cells in mouse bone marrow (<a href="#">de Bruijn et al. 1998</a>).</p>
<b>Flow Cytometry</b>	Use 10ul of the suggested working dilution to label 10 <sup>6</sup> cells in 100ul.
<b>References</b>	<ol style="list-style-type: none"> <li>1. Leenen, P.J. <i>et al.</i> (1990) Murine macrophage precursor characterization. II. Monoclonal antibodies against macrophage precursor antigens. <a href="#">Eur J Immunol. 20 (1): 27-34.</a></li> <li>2. Wynn, A.A. <i>et al.</i> (2001) Role of granulocyte/macrophage colony-stimulating factor in zymocel-induced hepatic granuloma formation. <a href="#">Am J Pathol. 158 (1): 131-45.</a></li> <li>3. de Bruijn, M.F. <i>et al.</i> (1998) Bone marrow cellular composition in Listeria monocytogenes infected mice detected using ER-MP12 and ER-MP20 antibodies: a flow cytometric alternative to differential counting. <a href="#">J Immunol Methods. 217 (1-2): 27-39.</a></li> <li>4. Revermann, M. <i>et al.</i> (2010) Soluble epoxide hydrolase deficiency attenuates neointima formation in the femoral cuff model of hyperlipidemic mice. <a href="#">Arterioscler Thromb Vasc Biol. 30: 909-14.</a></li> <li>5. Thorp, E. <i>et al.</i> (2011) A reporter for tracking the UPR in vivo reveals patterns of temporal and cellular stress during atherosclerotic progression. <a href="#">J Lipid Res. 52 (5): 1033-8.</a></li> <li>6. Thum, T. <i>et al.</i> (2011) Impairment of endothelial progenitor cell function and vascularization capacity by aldosterone in mice and humans. <a href="#">Eur Heart J. 32: 1275-86.</a></li> <li>7. Ross, E.A. <i>et al.</i> (2011) CD31 Is Required on CD4+ T Cells To Promote T Cell Survival during <i>Salmonella</i> Infection. <a href="#">J Immunol. 187: 1553-65.</a></li> <li>8. Geutskens, S.B. <i>et al.</i> (2005) Macrophages in the murine pancreas and their involvement in fetal endocrine development <i>in vitro</i>. <a href="#">J Leukoc Biol. 78: 845-52.</a></li> <li>9. Schledzewski, K. <i>et al.</i> (2011) Deficiency of liver sinusoidal scavenger receptors</li> </ol>

- stabilin-1 and -2 in mice causes glomerulofibrotic nephropathy via impaired hepatic clearance of noxious blood factors. [J Clin Invest. 121: 703-14.](#)
10. Sumagin, R. and Sarelius, I.H. (2010) Intercellular adhesion molecule-1 enrichment near tricellular endothelial junctions is preferentially associated with leukocyte transmigration and signals for reorganization of these junctions to accommodate leukocyte passage. [J Immunol. 184: 5242-52.](#)
11. Loureiro, J. *et al.* (2011) Blocking TGF- $\beta$ 1 Protects the Peritoneal Membrane from Dialysate-Induced Damage. [J Am Soc Nephrol. 22: 1682-95.](#)
12. Matsakas, A. *et al.* (2012) Exercise training attenuates the hypermuscular phenotype and restores skeletal muscle function in the myostatin null mouse. [Exp Physiol. 97 \(1\): 125-40.](#)
13. Baumeister, T. *et al.* (2003) Interleukin-3 $\alpha$ <sup>+</sup> myeloid dendritic cells and mast cells develop simultaneously from different bone marrow precursors in cultures with interleukin-3. [J Invest Dermatol. 121: 280-8.](#)
14. Moen, I. *et al.* (2012) Gene expression in tumor cells and stroma in dsRed 4T1 tumors in eGFP-expressing mice with and without enhanced oxygenation. [BMC Cancer. 12: 21.](#)
15. Trottier, M.D. *et al.* (2012) Enhanced production of early lineages of monocytic and granulocytic cells in mice with colitis [Proc Natl Acad Sci U S A. 109: 16594-9.](#)
16. Ling, V. *et al.* (1997) Structural identification of the hematopoietic progenitor antigen ER-MP12 as the vascular endothelial adhesion molecule PECAM-1 (CD31). [Eur J Immunol. 27:509-14.](#)
17. Nikolic, T. *et al.* (2002) Developmental stages of myeloid dendritic cells in mouse bone marrow. [Int Immunol. 15:515-24.](#)
18. Tagoh, H. *et al.* (2002) Transcription factor complex formation and chromatin fine structure alterations at the murine c-fms (CSF-1 receptor) locus during maturation of myeloid precursor cells. [Genes Dev. 16:1721-37.](#)
19. van Rijt, L. *et al.* (2002) Allergen-induced accumulation of airway dendritic cells is supported by an increase in CD31(hi)Ly-6C(neg) bone marrow precursors in a mouse model of asthma. [Blood. 100:3663-71.](#)
20. van der Loo, J. *et al.* (1995) Identification of hematopoietic stem cell subsets on the basis of their primitiveness using antibody ER-MP12. [Blood. 85:952-62.](#)
21. Fraccarollo, D. *et al.* (2015) Efficacy of mineralocorticoid receptor antagonism in the acute myocardial infarction phase: eplerenone versus spironolactone [ESC Heart Failure. 2 \(3\): 150-8.](#)
22. Stein-Merlob, A.F. *et al.* (2015) Blood Accessibility to Fibrin in Venous Thrombosis is Thrombus Age-Dependent and Predicts Fibrinolytic Efficacy: An *In Vivo* Fibrin Molecular Imaging Study. [Theranostics. 5 \(12\): 1317-27.](#)
23. Yip, H.K. *et al.* (2016) Tissue plasminogen activator deficiency preserves neurological function and protects against murine acute ischemic stroke. [Int J Cardiol. 205: 133-41.](#)
24. Shi, H. *et al.* (2016) Hiding inside? Intracellular expression of non-glycosylated c-kit protein in cardiac progenitor cells. [Stem Cell Res. 16 \(3\): 795-806.](#)
25. Ono, N. *et al.* (2014) A subset of chondrogenic cells provides early mesenchymal progenitors in growing bones. [Nat Cell Biol. 16 \(12\): 1157-67.](#)
26. Kroon, P. *et al.* (2013) JAK-STAT blockade inhibits tumor initiation and clonogenic recovery of prostate cancer stem-like cells. [Cancer Res. 73 \(16\): 5288-98.](#)
27. Trottier MD *et al.* (2012) Enhancement of hematopoiesis and lymphopoiesis in diet-induced obese mice. [Proc Natl Acad Sci U S A. 109 \(20\): 7622-9.](#)

28. Ryan, T.E. *et al.* (2016) Mitochondrial therapy improves limb perfusion and myopathy following hindlimb ischemia. [J Mol Cell Cardiol. 97: 191-6.](#)
29. Chowdhury, B. *et al.* (2016) Hyaluronidase 2 (HYAL2) is expressed in endothelial cells, as well as some specialized epithelial cells, and is required for normal hyaluronan catabolism. [Histochem Cell Biol. 145 \(1\): 53-66.](#)
30. Nakamura, Y. *et al.* (2015) Mesenchymal-stem-cell-derived exosomes accelerate skeletal muscle regeneration. [FEBS Lett. 589 \(11\): 1257-65.](#)
31. Reigstad, I. *et al.* (2016) The Effect of Stromal Integrin  $\beta$ 3-Deficiency on Two Different Tumors in Mice. [Cancers \(Basel\). 8 \(1\): pii: E14.](#)
32. Cao Y *et al.* (2016) IL-1 $\beta$  differently stimulates proliferation and multinucleation of distinct mouse bone marrow osteoclast precursor subsets. [J Leukoc Biol. 100 \(3\): 513-23.](#)
33. 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 \(11\): 4513-4523.](#)
34. Eskilsson, A. *et al.* (2014) Distribution of microsomal prostaglandin E synthase-1 in the mouse brain. [J Comp Neurol. 522 \(14\): 3229-44.](#)
35. Cao, Y. *et al.* (2017) TNF- $\alpha$  has both stimulatory and inhibitory effects on mouse monocyte-derived osteoclastogenesis. [J Cell Physiol. 232 \(12\): 3273-85.](#)
36. Piro, J.R. *et al.* (2018) Inhibition of 2-AG hydrolysis differentially regulates blood brain barrier permeability after injury. [J Neuroinflammation. 15 \(1\): 142.](#)
37. Ascone, G. *et al.* (2020) Increase in the Number of Bone Marrow Osteoclast Precursors at Different Skeletal Sites, Particularly in Long Bone and Jaw Marrow in Mice Lacking IL-1RA. [Int J Mol Sci. 21\(11\):3774.](#)
38. Tay, M.H.D. *et al.* (2019) Halted Lymphocyte Egress via Efferent Lymph Contributes to Lymph Node Hypertrophy During Hypercholesterolemia. [Front Immunol. 10: 575.](#)
39. Iring, A. *et al.* (2019) Shear stress-induced endothelial adrenomedullin signaling regulates vascular tone and blood pressure. [J Clin Invest. 129 \(7\): 2775-91.](#)
40. Oikawa, S. *et al.* (2018) Role of endothelial microRNA-23 clusters in angiogenesis in vivo. [Am J Physiol Heart Circ Physiol. 315 \(4\): H838-H846.](#)

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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. This product is photosensitive and should be protected from light.

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**Guarantee**

12 months from date of despatch

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

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**Regulatory** For research purposes only

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## Related Products

### Recommended Negative Controls

[RAT IgG2a NEGATIVE CONTROL:Alexa Fluor® 647 \(MCA1212A647\)](#)

### Recommended Useful Reagents

[MOUSE SEROBLOCK FcR \(BUF041A\)](#)

[MOUSE SEROBLOCK FcR \(BUF041B\)](#)

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