

Datasheet: MCA2388A488

**BATCH NUMBER 151671**

<b>Description:</b>	RAT ANTI MOUSE CD31:Alexa Fluor® 488
<b>Specificity:</b>	CD31
<b>Other names:</b>	PECAM-1
<b>Format:</b>	ALEXA FLUOR® 488
<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 - 1/5

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®488 - liquid		
<b>Max Ex/Em</b>	<b>Fluorophore</b>	<b>Excitation Max (nm)</b>	<b>Emission Max (nm)</b>
	Alexa Fluor®488	495	519
<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</b>	0.09% Sodium Azide		
<b>Stabilisers</b>	1% Bovine Serum Albumin		
<b>Approx. Protein</b>	IgG concentration 0.05 mg/ml		

## Concentrations

---

**Immunogen** BALB/c macrophage precursor cell hybrids

---

## External Database Links

### UniProt:

[Q08481](#) [Related reagents](#)

### Entrez Gene:

[18613](#) Pecam1 [Related reagents](#)

---

**Synonyms** Pecam, Pecam-1

---

**RRID** AB\_844495

---

**Fusion Partners** Cells from immunised rats were fused with the cells of the rat Y3-Ag1.2.3 myeloma cell line

---

**Specificity** **Rat anti Mouse CD31 antibody, clone ER-MP12** recognizes mouse CD31, a 140 kDa cell surface glycoprotein that is expressed at high levels on endothelial cells, platelets and most leukocyte subpopulations.

CD31 is also expressed on a major population of macrophage / dendritic cell precursors in the bone marrow. Studies show that clone ER-MP12 can be used in conjunction with clone ER-MP20 ([MCA2389GA](#)) in two colour flow cytometric analysis, to identify different stages of myeloid progenitor cells in mouse bone marrow ([de Bruijn et al. 1998](#)).

---

**Flow Cytometry** Use 10ul of the suggested working dilution to label  $10^6$  cells in 100ul.

---

## References

1. Leenen, P.J. *et al.* (1990) Murine macrophage precursor characterization. II. Monoclonal antibodies against macrophage precursor antigens. [Eur J Immunol. 20 \(1\): 27-34.](#)
2. Wynn, A.A. *et al.* (2001) Role of granulocyte/macrophage colony-stimulating factor in zymocel-induced hepatic granuloma formation. [Am J Pathol. 158 \(1\): 131-45.](#)
3. de Bruijn, M.F. *et al.* (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. [J Immunol Methods. 217 \(1-2\): 27-39.](#)
4. Revermann, M. *et al.* (2010) Soluble epoxide hydrolase deficiency attenuates neointima formation in the femoral cuff model of hyperlipidemic mice. [Arterioscler Thromb Vasc Biol. 30: 909-14.](#)
5. Thorp, E. *et al.* (2011) A reporter for tracking the UPR in vivo reveals patterns of temporal and cellular stress during atherosclerotic progression. [J Lipid Res. 52 \(5\): 1033-8.](#)
6. Thum, T. *et al.* (2011) Impairment of endothelial progenitor cell function and vascularization capacity by aldosterone in mice and humans. [Eur Heart J. 32: 1275-86.](#)
7. Ross, E.A. *et al.* (2011) CD31 Is Required on CD4+ T Cells To Promote T Cell Survival during *Salmonella* Infection. [J Immunol. 187: 1553-65.](#)
8. Geutskens, S.B. *et al.* (2005) Macrophages in the murine pancreas and their involvement in fetal endocrine development *in vitro*. [J Leukoc Biol. 78: 845-52.](#)

9. Schledzewski, K. *et al.* (2011) Deficiency of liver sinusoidal scavenger receptors 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 $\alpha$  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.](#)

---

**Storage**

Store at +4°C or at -20°C if preferred.  
 Storage in frost-free freezers is not recommended.  
 This product should be stored undiluted. 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](mailto:outlicensing@thermofisher.com)

---

**Health And Safety Information**

Material Safety Datasheet documentation #10041 available at: <https://www.bio-rad-antibodies.com/SDS/MCA2388A488>

10041

---

**Regulatory**

For research purposes only

---

## Related Products

### Recommended Negative Controls

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

**North & South** Tel: +1 800 265 7376

**Worldwide**

Tel: +44 (0)1865 852 700

**Europe**

Tel: +49 (0) 89 8090 95 21

**America** Fax: +1 919 878 3751

Fax: +44 (0)1865 852 739

Fax: +49 (0) 89 8090 95 50

Email: [antibody\\_sales\\_us@bio-rad.com](mailto:antibody_sales_us@bio-rad.com)

Email: [antibody\\_sales\\_uk@bio-rad.com](mailto:antibody_sales_uk@bio-rad.com)

Email: [antibody\\_sales\\_de@bio-rad.com](mailto: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://bio-rad-antibodies.com/datasheets)

'M366768:200529'

**Printed on 23 Jan 2025**

---

© 2025 Bio-Rad Laboratories Inc | [Legal](#) | [Imprint](#)