

Datasheet: MCA2388PB

Description:	RAT ANTI MOUSE CD31:Pacific Blue®
Specificity:	CD31
Other names:	PECAM-1
Format:	Pacific Blue®
Product Type:	Monoclonal Antibody
Clone:	ER-MP12
Isotype:	IgG2a
Quantity:	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.

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	▪			Neat

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.

Target Species	Mouse		
Product Form	Purified IgG conjugated to Pacific Blue® - liquid		
Max Ex/Em	Fluorophore	Excitation Max (nm)	Emission Max (nm)
	Pacific Blue®	410	455
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)		
	1% bovine serum albumin		
Approx. Protein Concentrations	IgG concentration 0.05 mg/ml		

Immunogen	BALB/c macrophage precursor cell hybrids
External Database Links	<p>UniProt: Q08481 Related reagents</p> <p>Entrez Gene: 18613 Pecam1 Related reagents</p>
Synonyms	Pecam, Pecam-1
Fusion Partners	Cells from immunised rats were fused with the cells of the rat Y3-Ag1.2.3 myeloma cell line
Specificity	<p>Rat anti Mouse CD31 antibody, clone ER-MP12 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 (MCA2389GA) in two colour flow cytometric analysis, to identify different stages of myeloid progenitor cells in mouse bone marrow (de Bruijn <i>et al.</i> 1998).</p>
Flow Cytometry	<p>Use 10µl of the suggested working dilution to label 10⁶ cells in 100µl.</p> <p>The Fc region of monoclonal antibodies may bind to cells expressing low affinity Fc receptors. This may be reduced by using SeroBlock FcR (BUF041A/BUF041B).</p>
References	<ol style="list-style-type: none"> 1. Leenen, P.J. <i>et al.</i> (1990) Murine macrophage precursor characterization. II. Monoclonal antibodies against macrophage precursor antigens. Eur J Immunol. 20 (1): 27-34. 2. van der Loo, J. <i>et al.</i> (1995) Identification of hematopoietic stem cell subsets on the basis of their primitiveness using antibody ER-MP12. Blood. 85:952-62. 3. Ling, V. <i>et al.</i> (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. 4. 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. J Immunol Methods. 217 (1-2): 27-39. 5. Wynn, A.A. <i>et al.</i> (2001) Role of granulocyte/macrophage colony-stimulating factor in zymocel-induced hepatic granuloma formation. Am J Pathol. 158 (1): 131-45. 6. van Rijt, L. <i>et al.</i> (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. 7. Tagoh, H. <i>et al.</i> (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. 8. Nikolic, T. <i>et al.</i> (2002) Developmental stages of myeloid dendritic cells in mouse bone marrow. Int Immunol. 15:515-24.

9. Baumeister, T. *et al.* (2003) Interleukin-3 α myeloid dendritic cells and mast cells develop simultaneously from different bone marrow precursors in cultures with interleukin-3. [J Invest Dermatol. 121: 280-8.](#)
10. 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.](#)
11. 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.](#)
12. 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.](#)
13. 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.](#)
14. 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.](#)
15. 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.](#)
16. 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.](#)
17. Loureiro, J. *et al.* (2011) Blocking TGF- β 1 Protects the Peritoneal Membrane from Dialysate-Induced Damage. [J Am Soc Nephrol. 22: 1682-95.](#)
18. 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.](#)
19. 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.](#)
20. 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.](#)
21. 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.](#)
22. 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.](#)
23. Ono, N. *et al.* (2014) A subset of chondrogenic cells provides early mesenchymal progenitors in growing bones. [Nat Cell Biol. 16 \(12\): 1157-67.](#)
24. Eskilsson, A. *et al.* (2014) Distribution of microsomal prostaglandin E synthase-1 in the mouse brain. [J Comp Neurol. 522 \(14\): 3229-44.](#)
25. Nakamura, Y. *et al.* (2015) Mesenchymal-stem-cell-derived exosomes accelerate skeletal muscle regeneration. [FEBS Lett. 589 \(11\): 1257-65.](#)
26. Fraccarollo, D. *et al.* (2015) Efficacy of mineralocorticoid receptor antagonism in the acute myocardial infarction phase: eplerenone versus spironolactone. [ESC Heart Fail. 2 \(3\): 150-8.](#)
27. 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.](#)

28. Cao Y *et al.* (2016) IL-1 β differently stimulates proliferation and multinucleation of distinct mouse bone marrow osteoclast precursor subsets. [J Leukoc Biol. 100 \(3\): 513-23.](#)
29. Ryan, T.E. *et al.* (2016) Mitochondrial therapy improves limb perfusion and myopathy following hindlimb ischemia. [J Mol Cell Cardiol. 97: 191-6.](#)
30. 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.](#)
31. 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.](#)
32. 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.](#)
33. Reigstad, I. *et al.* (2016) The Effect of Stromal Integrin β 3-Deficiency on Two Different Tumors in Mice. [Cancers \(Basel\). 8 \(1\): pii: E14.](#)
34. 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.](#)
35. Cao, Y. *et al.* (2017) TNF- α 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. 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.](#)
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. 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.](#)
41. Patel, P. *et al.* (2023) Development of a Personalised Device for Systemic Magnetic Drug Targeting to Brain Tumours. [Nanotheranostics. 7 \(1\): 102-16.](#)
42. Eskilsson, A. *et al.* (2023) Prostaglandin production in brain endothelial cells during the initiation of fever. [Commun Integr Biol. 16 \(1\): 2166237.](#)

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.

Guarantee

12 months from date of despatch

Acknowledgements

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Regulatory	For research purposes only
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Related Products

Recommended Negative Controls

[RAT IgG2a NEGATIVE CONTROL:Pacific Blue® \(MCA1212PB\)](#)

Recommended Useful Reagents

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

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

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
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Printed on 16 Oct 2023

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