

Datasheet: MCA2388PE

| | |
|----------------------|-------------------------|
| Description: | RAT ANTI MOUSE CD31:RPE |
| Specificity: | CD31 |
| Other names: | PECAM-1 |
| Format: | RPE |
| Product Type: | Monoclonal Antibody |
| Clone: | ER-MP12 |
| Isotype: | IgG2a |
| Quantity: | 100 TESTS |

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 - 1/10 |

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 R. Phycoerythrin (RPE) - lyophilized | | | | | | |
| Reconstitution | Reconstitute with 1 ml distilled water | | | | | | |
| 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>RPE 488nm laser</td> <td>496</td> <td>578</td> </tr> </tbody> </table> | Fluorophore | Excitation Max (nm) | Emission Max (nm) | RPE 488nm laser | 496 | 578 |
| Fluorophore | Excitation Max (nm) | Emission Max (nm) | | | | | |
| RPE 488nm laser | 496 | 578 | | | | | |
| Preparation | Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant | | | | | | |
| Buffer Solution | Phosphate buffered saline | | | | | | |
| Preservative | 0.09% sodium azide (NaN ₃) | | | | | | |
| Stabilisers | 1% bovine serum albumin 5% sucrose | | | | | | |

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_1055663

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 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. 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 *et al.* 1998](#)).

Flow Cytometry

Use 10µl of the suggested working dilution to label 10⁶ cells in 100µl. 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](#)).

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. 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.](#)
3. 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.](#)
4. 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.](#)
5. 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.](#)
6. 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.](#)
7. 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.](#)

8. Nikolic, T. *et al.* (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

Store at +4°C.

DO NOT FREEZE.

This product should be stored undiluted. This product is photosensitive and should be protected from light. Should this product contain a precipitate we recommend microcentrifugation before use.

Guarantee

12 months from date of despatch

Health And Safety Information

Material Safety Datasheet documentation #20487 available at: <https://www.bio-rad-antibodies.com/SDS/MCA2388PE>
20487

Related Products

Recommended Negative Controls

[RAT IgG2a NEGATIVE CONTROL:RPE \(MCA1212PE\)](#)

Recommended Useful Reagents

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

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

North & South Tel: +1 800 265 7376

America 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

To find a batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets

'M419536:230616'

Printed on 22 Sep 2023