Datasheet: MCA2389A647

Description:	RAT ANTI MOUSE Ly-6C:Alexa Fluor® 647
Specificity:	Ly-6C
Other names:	Lymphocyte antigen 6C2
Format:	ALEXA FLUOR® 647
Product Type:	Monoclonal Antibody
Clone:	ER-MP20
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 - 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 Alexa Fluor® 647 - liquid

Max Ex/Em

Fluorophore	Excitation Max (nm)	Emission Max (nm)
Alexa Fluor®647	650	665

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	**UniProt:** P0CW03 Related reagents
RRID	AB_2137341
Fusion Partners	Spleen cells from immunized rats were fused with cells of the Y3-Ag1.2.3 myeloma cell line.
Specificity	**Rat anti Mouse Ly-6C antibody, clone ER-MP20** recognizes murine Ly-6C, a 131 amino acid ~14 kDa differentiation antigen, expressed on macrophage/dendritic cell precursors in mid-stage development (late CFU-M, monoblasts and immature monocytes), granulocytes, and on a wide range of endothelial cells and subpopulations of B- and T-lymphocytes. Rat anti Mouse Ly-6C antibody, clone ER-MP20 is able to distinguish multiple mouse blood monocyte subsets: immature Ly-6C^{hi} monocytes are recruited to acute peripheral inflammation and develop into Ly-6C^{+} exudate macrophages, whereas more mature Ly-6C$^{-/lo}$ monocytes are precursors for tissue macrophages and dendritic cells in steady state. Rat anti Mouse Ly-6C, clone ER-MP20 can be used in conjunction with clone ER-MP12 in two colour flow cytometric analysis, to identify different stages of myeloid progenitor cells in mouse bone marrow (Leenen *et al.* 1990). Rat anti Mouse Ly-6C was originally described as recognizing a protein encoded by the LY6C gene. It has subsequently become apparent that the LY6C locus demonstrates polymorphism and the LY6C gene has been re-designated LY6C2. The LY6C1 gene encodes a similar protein with ~95% sequence homology to LY6C2.
Flow Cytometry	Use 10µl of the suggested working dilution to label 10^6 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. Zhang, Y. & Bliska, J.B. (2010) YopJ-promoted cytotoxicity and systemic colonization are associated with high levels of murine interleukin-18, gamma interferon, and neutrophils in a live vaccine model of *Yersinia pseudotuberculosis* infection. Infect Immun 78: 2329-41. 2. Leenen, P.J. *et al.* (1990) Murine macrophage precursor characterization. II. Monoclonal antibodies against macrophage precursor antigens. Eur J Immunol. 20 (1): 27-34. 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. Schatteman, G.C. *et al.* (2010) Lin- Cells Mediate Tissue Repair by Regulating MCP-1/CCL-2. Am J Pathol. 177: 2002-10. 5. Baumeister, T. *et al.* (2003) Interleukin-3Ralpha+ myeloid dendritic cells and mast cells

develop simultaneously from different bone marrow precursors in cultures with interleukin-3. J Invest Dermatol. 121: 280-8.
6. Devey, L. *et al.* (2009) Tissue-resident macrophages protect the liver from ischemia reperfusion injury via a heme oxygenase-1-dependent mechanism. Mol Ther. 17: 65-72.
7. Nikolic, T. *et al.* (2003) Developmental stages of myeloid dendritic cells in mouse bone marrow. Int Immunol. 15: 515-24.
8. 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.
9. Lesokhin, A.M. *et al.* (2012) Monocytic CCR2+ Myeloid-Derived Suppressor Cells Promote Immune Escape by Limiting Activated CD8 T-cell Infiltration into the Tumor Microenvironment. Cancer Res. 72: 876-86.
10. Chan, J. *et al.* (1998) Macrophage lineage cells in inflammation: characterization by colony-stimulating factor-1 (CSF-1) receptor (c-Fms), ER-MP58, and ER-MP20 (Ly-6C) expression. Blood. 92: 1423-31.
11. van Rijt, L.S. *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.
12. Arnardottir, H.H.*et al.* (2012) Dietary Fish Oil Decreases the Proportion of Classical Monocytes in Blood in Healthy Mice but Increases Their Proportion upon Induction of Inflammation. J Nutr. 142: 803-8.
13. Henkel, G. *et al*. (1999) Commitment to the monocytic lineage occurs in the absence of the transcription factor PU.1. Blood. 93:2849-58.
14. Bossaller, L. *et al.* (2013) Overexpression of membrane-bound fas ligand (CD95L) exacerbates autoimmune disease and renal pathology in pristane-induced lupus. J Immunol. 191: 2104-14.
15. Garcia, J.A. *et al.* (2013) Regulation of adaptive immunity by the fractalkine receptor during autoimmune inflammation. J Immunol. 191: 1063-72.
16. Stijlemans, B. *et al.* (2015) Murine Liver Myeloid Cell Isolation Protocol BIO-PROTOCOL. 5 (10).
17. Damya, L. *et al.* (2014) Purification of Tumor-Associated Macrophages (TAM) and Tumor-Associated Dendritic Cells (TADC) BIO-PROTOCOL. 4 (22).
18. Morganti, J.M. *et al.* (2016) Age exacerbates the CCR2/5-mediated neuroinflammatory response to traumatic brain injury. J Neuroinflammation. 13 (1): 80.
19. Mooney, J.E. *et al.* (2010) Cellular plasticity of inflammatory myeloid cells in the peritoneal foreign body response. Am J Pathol. 176 (1): 369-80.
20. Iwasaki, Y. *et al.* (2011) *In situ* proliferation and differentiation of macrophages in dental pulp. Cell Tissue Res. 346 (1): 99-109.
21. Movahedi, K. *et al.* (2012) Nanobody-based targeting of the macrophage mannose receptor for effective in vivo imaging of tumor-associated macrophages. Cancer Res. 72 (16): 4165-77.
22. Ribechini, E. *et al.* (2009) Gr-1 antibody induces STAT signaling, macrophage marker expression and abrogation of myeloid-derived suppressor cell activity in BM cells. Eur J Immunol. 39 (12): 3538-51.
23. Bossaller, L. *et al.* (2016) TLR9 Deficiency Leads to Accelerated Renal Disease and Myeloid Lineage Abnormalities in Pristane-Induced Murine Lupus. J Immunol. 197 (4): 1044-53.
24. Barnes, M.A. *et al.* (2015) Macrophage migration inhibitory factor is required for

recruitment of scar-associated macrophages during liver fibrosis. J Leukoc Biol. 97 (1): 161-9.
25. Ohnishi, K. *et al.* (2012) Immunohistochemical detection of possible cellular origin of hepatic histiocytic sarcoma in mice. J Clin Exp Hematop. 52 (3): 171-7.
26. Van den Bossche. J. *et al.* (2012) Claudin-1, claudin-2 and claudin-11 genes differentially associate with distinct types of anti-inflammatory macrophages *in vitro* and with parasite- and tumour-elicited macrophages *in vivo*. Scand J Immunol. 75 (6): 588-98.
27. Houthuys, E. *et al.* (2010) A method for the isolation and purification of mouse peripheral blood monocytes. J Immunol Methods. 359 (1-2): 1-10.
28. Greifenberg, V. *et al.* (2009) Myeloid-derived suppressor cell activation by combined LPS and IFN-gamma treatment impairs DC development. Eur J Immunol. 39 (10): 2865-76.
29. Cardona, S.M. *et al.* (2015) Disruption of Fractalkine Signaling Leads to Microglial Activation and Neuronal Damage in the Diabetic Retina. ASN Neuro. 7 (5):1759091415608204.
30. Waddell, A. *et al.* (2011) Colonic eosinophilic inflammation in experimental colitis is mediated by Ly6C(high) CCR2(+) inflammatory monocyte/macrophage-derived CCL11. J Immunol. 186 (10): 5993-6003.
31. Robbie, S.J. *et al.* (2016) Enhanced Ccl2-Ccr2 signaling drives more severe choroidal neovascularization with aging. Neurobiol Aging. 40: 110-9.
32. Cao, Y. *et al.* (2016) IL-1β differently stimulates proliferation and multinucleation of distinct mouse bone marrow osteoclast precursor subsets. J Leukoc Biol. 100 (3): 513-23.
33. 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.
34. Khedoe, P.P.S.J. *et al.* (2017) Acute and chronic effects of treatment with mesenchymal stromal cells on LPS-induced pulmonary inflammation, emphysema and atherosclerosis development. PLoS One. 12 (9): e0183741.
35. Koohy, H. *et al.* (2018) Genome organization and chromatin analysis identify transcriptional downregulation of insulin-like growth factor signaling as a hallmark of aging in developing B cells. Genome Biol. 19 (1): 126.
36. Pluijmert, N.J. *et al.* (2020) Effects on cardiac function, remodeling and inflammation following myocardial ischemia-reperfusion injury or unreperfused myocardial infarction in hypercholesterolemic APOE*3-Leiden mice. Sci Rep. 10 (1): 16601.
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. Pluijmert, N.J. *et al.* (2021) Phosphorylcholine antibodies restrict infarct size and left ventricular remodelling by attenuating the unreperfused post-ischaemic inflammatory response. J Cell Mol Med. 25 (16): 7772-82.
39. Njock, M-K. (2022) Endothelial extracellular vesicles promote tumour growth by tumour-associated macrophage reprogramming J Extracell Vesicles 2022 Jun;11(6):e12228.
40. Vainchtein, I.D. *et al.* (2023) Characterizing microglial gene expression in a model of secondary progressive multiple sclerosis. Glia. 71 (3): 588-601.
41. Mielczarek, O. *et al.* (2023) Intra- and interchromosomal contact mapping reveals the Igh locus has extensive conformational heterogeneity and interacts with B-lineage genes. Cell Rep 42 (9):113074.

42. Thiem, K. *et al.* (2019) Deletion of hematopoietic Dectin-2 or CARD9 does not protect against atherosclerotic plaque formation in hyperlipidemic mice. Sci Rep. 9 (1): 4337.
43. Heissig, B. *et al.* (2022) siRNA against CD40 delivered via a fungal recognition receptor ameliorates murine acute graft-versus-host disease. EJHaem. 3 (3): 849-61.
44. Cardona, S.M. *et al.* (2018) Role of the Fractalkine Receptor in CNS Autoimmune Inflammation: New Approach Utilizing a Mouse Model Expressing the Human CX3CR1(I249/M280) Variant. Front Cell Neurosci. 12: 365.

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
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Health And Safety Information	Material Safety Datasheet documentation #10041 available at: https://www.bio-rad-antibodies.com/SDS/MCA2389A647 10041
Regulatory	For research purposes only

Related Products

Recommended Negative Controls

RAT IgG2a NEGATIVE CONTROL:Alexa Fluor® 647 (MCA1212A647)

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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'M414904:221214'

Printed on 08 Mar 2024

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