

Datasheet: MCA497RT

Description:	RAT ANTI MOUSE F4/80
Specificity:	F4/80
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	Cl:A3-1
Isotype:	IgG2b
Quantity:	25 µg

Product Details

RRID AB_1102558

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	▪			1/50 - 1/100
Immunohistology - Frozen	▪			
Immunohistology - Paraffin (1)	▪			
Immunohistology - Resin	▪			
ELISA			▪	
Immunoprecipitation	▪			
Western Blotting	▪			
Immunofluorescence	▪			
Radioimmunoassays	▪			
Immuno-electron Microscopy	▪			

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.

(1) Rat anti Mouse F4/80 antibody, clone A3-1 requires pre-treatment of paraffin sections prior to staining. Proteinase K is recommended for tissues fixed for less than 24 hours. Citrate buffer pH 6.0 is recommended for tissues fixed for more than 24 hours. Please view the protocol at [Antigen Retrieval Techniques](#).

Target Species	Mouse
Product Form	Purified IgG - liquid
Preparation	Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant.
Buffer Solution	Phosphate buffered saline
Preservative	0.09% Sodium Azide

Stabilisers

Carrier Free Yes

Approx. Protein Concentrations IgG concentration 1.0 mg/ml

Immunogen Thioglycollate stimulated peritoneal macrophages from C57BL/6 mice.

External Database Links

UniProt:

[Q61549](#) [Related reagents](#)

Entrez Gene:

[13733](#) Emr1 [Related reagents](#)

Synonyms Gpf480

Fusion Partners Spleen cells from immunised HOB2 rats were fused with cells of the mouse NS1 myeloma cell line.

Specificity

Rat anti mouse F4/80 antibody, clone Cl:A3-1 recognises the [murine F4/80 antigen](#), a ~160 kDa cell surface glycoprotein member of the EGF-TM7 family of proteins which shares 68% overall amino acid identity with human EGF module-containing mucin-like hormone receptor 1 (EMR1).

Expression of F4/80 is heterogeneous and is modulated during macrophage maturation and activation. The F4/80 antigen is expressed on a wide range of mature tissue macrophages including Kupffer cells, Langerhans cells, microglia, macrophages located in the gut lamina propria, peritoneal cavity, lung, thymus, bone marrow stroma and macrophages in the red pulp of the spleen ([Hume, et al. 1984](#)). F4/80 antigen is also expressed on a subpopulation of dendritic cells but is absent from macrophages located in T cell areas of the spleen and lymph node ([Gordon, et al. 1994](#)). The ligands and biological functions of the F4/80 antigen have not been fully determined but a role for F4/80 in the generation of efferent CD8+ve regulatory T cells is proposed ([Lin, et al. 2005](#))

Rat anti mouse F4/80 antibody, clone Cl:A3-1 modulates cytokine levels released in response to *Listeria monocytogenes* ([Warschkau & Kiderlen, 1999](#)).

A Human anti-idiotypic Cl:A31 antibody, clone 17867 ([HCA154](#)) which binds to and blocks activity of Rat anti mouse F4/80 antibody, clone Cl:A3-1 is also available for use as a control in experiments utilizing clone A3-1.

Flow Cytometry Use 10ul of the suggested working dilution to label 10⁶ cells in 100ul.

References

1. Gordon, S. *et al.* (1992) Antigen markers of macrophage differentiation in murine tissues. [Curr Top Microbiol Immunol. 181: 1-37.](#)
2. Warschkau, H. & Kiderlen, A.F. (1999) A monoclonal antibody directed against the murine macrophage surface molecule F4/80 modulates natural immune response to *Listeria monocytogenes*. [J Immunol. 163 \(6\): 3409-16.](#)
3. Lin, H.H.*et al.* (2005) The macrophage F4/80 receptor is required for the induction of antigen-specific efferent regulatory T cells in peripheral tolerance. [J Exp Med. 201 \(10\): 1615-25.](#)
4. Chan, R.J. *et al.* (2005) Human somatic PTPN11 mutations induce hematopoietic cell hypersensitivity to granulocyte-macrophage colony stimulating factor [Blood. 105: 3737-3742.](#)
5. Moore, K.J. *et al.* (2000) Divergent response to LPS and bacteria in CD14-deficient murine

- macrophages. [J Immunol. 165 \(8\): 4272-80.](#)
6. Dandekar, A.A. *et al.* (2004) Bystander CD8 T-cell-mediated demyelination is interferon-gamma-dependent in a coronavirus model of multiple sclerosis. [Am J Pathol. 164: 363-9.](#)
7. Muto, A. *et al.* (2011) Eph-B4 prevents venous adaptive remodeling in the adult arterial environment. [J Exp Med. 208 \(3\): 561-75.](#)
8. Pizza, F.X. *et al.* (2005) Neutrophils contribute to muscle injury and impair its resolution after lengthening contractions in mice. [J Physiol. 562 \(Pt 3\): 899-913.](#)
9. Tarallo, V. *et al.* (2011) The biflavonoid amentoflavone inhibits neovascularization preventing the activity of proangiogenic vascular endothelial growth factors. [J Biol Chem. 286: 19641-51.](#)
10. Rivollier, A. *et al.* (2012) Inflammation switches the differentiation program of Ly6Chi monocytes from antiinflammatory macrophages to inflammatory dendritic cells in the colon. [J Exp Med. 209: 139-55.](#)
11. Hemmi, H. *et al.* (2009) A new triggering receptor expressed on myeloid cells (Trem) family member, Trem-like 4, binds to dead cells and is a DNAX activation protein 12-linked marker for subsets of mouse macrophages and dendritic cells. [J Immunol. 182:1278-86.](#)
12. Seitz, O. *et al.* (2010) Wound Healing in Mice with High-Fat Diet- or ob Gene-Induced Diabetes-Obesity Syndromes: A Comparative Study [Exp Diabetes Res. 2010: 476969.](#)
13. Miao, E.A. *et al.* (2011) Caspase-1-induced pyroptosis is an innate immune effector mechanism against intracellular bacteria. [Nat Immunol. 11: 1136-42.](#)
14. Wang, X. *et al.* (2011) Activation of the cholinergic antiinflammatory pathway ameliorates obesity-induced inflammation and insulin resistance [Endocrinology. 152: 836-46.](#)
15. Cunningham, O. *et al.* (2009) Microglia and the urokinase plasminogen activator receptor/uPA system in innate brain inflammation. [Glia. 57: 1802-14.](#)
16. Gornicka, A. *et al.* (2012) Adipocyte hypertrophy is associated with lysosomal permeability both *in vivo* and *in vitro*: role in adipose tissue inflammation. [Am J Physiol Endocrinol Metab. 303: E597-606.](#)
17. Akbarshahi, H. *et al.* (2012) Enrichment of Murine CD68(+)CCR2(+) and CD68(+)CD206(+) Lung Macrophages in Acute Pancreatitis-Associated Acute Lung Injury. [PLoS One. 7: e42654.](#)
18. Banda NK *et al.* (2012) Role of C3a receptors, C5a receptors, and complement protein C6 deficiency in collagen antibody-induced arthritis in mice. [J Immunol. 188 \(3\): 1469-78.](#)
19. Bonde, A.K. *et al.* (2012) Intratumoral macrophages contribute to epithelial-mesenchymal transition in solid tumors. [BMC Cancer. 12: 35.](#)
20. Choi, K.M. *et al.* (2010) CD206-positive M2 macrophages that express heme oxygenase-1 protect against diabetic gastroparesis in mice. [Gastroenterology. 138 \(7\): 2399-409, 2409.e1.](#)
21. Tamaki, S. *et al.* (2013) Interleukin-16 promotes cardiac fibrosis and myocardial stiffening in heart failure with preserved ejection fraction. [PLoS One. 8: e68893.](#)
22. Kihira, Y. *et al.* (2014) Deletion of hypoxia-inducible factor-1 α in adipocytes enhances glucagon-like Peptide-1 secretion and reduces adipose tissue inflammation. [PLoS One. 9\(4\):e93856.](#)
23. Chinzei, N. *et al.* (2015) P21 deficiency delays regeneration of skeletal muscular tissue. [PLoS One. 10 \(5\): e0125765.](#)
24. Sumiyoshi, M. *et al.* (2015) Antitumor and antimetastatic actions of xanthoangelol and 4-hydroxyderricin isolated from *Angelica keiskei* roots through the inhibited activation and differentiation of M2 macrophages. [Phytomedicine. 22 \(7-8\): 759-67.](#)
25. Kim, M. *et al.* (2015) Progression of Alport Kidney Disease in Col4a3 Knock Out Mice Is Independent of Sex or Macrophage Depletion by Clodronate Treatment. [PLoS One. 10 \(11\): e0141231.](#)
26. Nagase, M. *et al.* (2016) Deletion of Rac1GTPase in the Myeloid Lineage Protects against Inflammation-Mediated Kidney Injury in Mice. [PLoS One. 11 \(3\): e0150886.](#)
27. Bonaterra, G.A. *et al.* (2016) Morphological Alterations in Gastrocnemius and Soleus Muscles in Male and Female Mice in a Fibromyalgia Model. [PLoS One. 11 \(3\): e0151116.](#)
28. Lei, B. *et al.* (2016) Neuroprotective pentapeptide CN-105 improves functional and histological outcomes in a murine model of intracerebral hemorrhage. [Sci Rep. 6: 34834.](#)

29. Glastras, S.J. *et al.* (2017) The renal consequences of maternal obesity in offspring are overwhelmed by postnatal high fat diet. [PLoS One. 12 \(2\): e0172644.](#)
30. Zeng, J. & Howard, J.C. (2010) Spontaneous focal activation of invariant natural killer T (iNKT) cells in mouse liver and kidney. [BMC Biol. 8: 142.](#)
31. Pepe, G. *et al.* (2017) Self-renewal and phenotypic conversion are the main physiological responses of macrophages to the endogenous estrogen surge. [Sci Rep. 7: 44270.](#)
32. Kawada, S. *et al.* (2017) Impairment of cold injury-induced muscle regeneration in mice receiving a combination of bone fracture and alendronate treatment. [PLoS One. 12 \(7\): e0181457.](#)
33. Zhang, M.Z. *et al.* (2015) Inhibition of cyclooxygenase-2 in hematopoietic cells results in salt-sensitive hypertension. [J Clin Invest. 125 \(11\): 4281-94.](#)
34. Crompton, M. *et al.* (2017) A mutation in Nischarin causes otitis media via LIMK1 and NF-κB pathways. [PLoS Genet. 13 \(8\): e1006969.](#)
35. Sogawa, Y. *et al.* (2017) Infiltration of M1, but not M2, macrophages is impaired after unilateral ureter obstruction in Nrf2-deficient mice. [Sci Rep. 7 \(1\): 8801.](#)
36. Suzuki, Y. *et al.* (2017) Requisite role of vasohibin-2 in spontaneous gastric cancer formation and accumulation of cancer-associated fibroblasts. [Cancer Sci. 108 \(12\): 2342-51.](#)
37. Peng, Y. (2018) B cell responses to apoptotic cells in MFG-E8^{-/-} mice. [PLoS One. 13 \(10\): e0205172.](#)
38. WasgewaterWijesinghe, D.K. *et al.* (2019) Normal inflammation and regeneration of muscle following injury require osteopontin from both muscle and non-muscle cells. [Skelet Muscle. 9 \(1\): 6.](#)

Storage

Store at +4°C or at -20°C if preferred.

This product should be stored undiluted.

Storage in frost free freezers is not recommended. Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.

Guarantee

18 months from date of despatch.

Health And Safety Information

Material Safety Datasheet documentation #10040 available at: 10040: <https://www.bio-rad-antibodies.com/uploads/MSDS/10040.pdf>

Regulatory

For research purposes only

Related Products

Recommended Secondary Antibodies

Goat Anti Rat IgG (STAR69...) [FITC](#)

Goat Anti Rat IgG2b (STAR114...) [HRP](#)

Goat Anti Rat IgG (H/L) (305001...) [HRP](#)

Goat Anti Rat IgG (STAR73...) [RPE](#)

Recommended Useful Reagents

[ANTIGEN RETRIEVAL BUFFER, pH8.0 \(BUF025A\)](#)

[ANTIGEN RETRIEVAL BUFFER, pH8.0 \(BUF025C\)](#)

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

Printed on 30 May 2019

© 2019 Bio-Rad Laboratories Inc | [Legal](#) | [Imprint](#)