Datasheet: MCA874FT

Description:	MOUSE ANTI HUMAN MACROPHAGES:FITC
Specificity:	MACROPHAGES/MONOCYTES/GRANULOCYTES
Other names:	CALPROTECTIN
Format:	FITC
Product Type:	Monoclonal Antibody
Clone:	MAC387
Isotype:	IgG1
Quantity:	25 µg

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 (1)	▪			Neat

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) **Membrane permeabilization is required for this application. The use of Leucoperm (Product Code BUF09) is recommended for this purpose.**

Target Species

Human

Species Cross Reactivity

Reacts with: Horse, Pig, Dog, Rabbit, Baboon, Bovine, Guinea Pig, Rat, Cat, Cynomolgus monkey, Rhesus Monkey, Goat, Fallow deer, Pygmy hippopotamus, Mink, Marmoset

N.B. Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information.

Product Form

Purified IgG conjugated to Fluorescein Isothiocyanate Isomer 1 (FITC) - liquid

Max Ex/Em

Fluorophore	Excitation Max (nm)	Emission Max (nm)
FITC	490	525

Preparation

Purified IgG prepared by affinity chromatography on Protein A from tissue culture

	supernatant
Buffer Solution	Phosphate buffered saline
Preservative Stabilisers	0.09% Sodium Azide 1% Bovine Serum Albumin
Approx. Protein Concentrations	IgG concentration 0.1 mg/ml
Immunogen	Human monocytes.
External Database Links	**UniProt:** P06702 Related reagents **Entrez Gene:** 6280 S100A9 Related reagents
Synonyms	CAGB, CFAG, MRP14
RRID	AB_1102747
Fusion Partners	Spleen cells from immunized BALB/c mice were fused with cells of the mouse NS1 myeloma cell line.
Specificity	**Mouse anti Human macrophages, clone MAC387** recognizes the L1 or Calprotectin molecule, an intracytoplasmic antigen comprised of a 12 kDa alpha chain and a 14 kDa beta chain. Although originally described as binding to epitopes common to both the alpha and beta chains (Flavell *et al.* 1987) subsequent evidence indicates that the antibody detects an epitope exclusively expressed on the beta chain (Goebeler *et al.* 1994) demonstrated by immunofluorescent and western blotting on both naturally expressing and transfected targets. In addition, Mouse anti Human macrophages, clone MAC387 detects the beta chain in complex with the alpha. The antigen recognized by Mouse anti Human macrophages, clone MAC387 is expressed by granulocytes, monocytes and by tissue macrophages. Variable results have been reported for staining brain macrophages and microglia. The epitope recognized appears to be well conserved and the antibody is routinely used for the detection of myeloid cells in a wide range of species.
Flow Cytometry	Use 10ul of the suggested working dilution to label $1x10^6$ cells in 100ul.
References	1. Burudi, E.M. *et al.* (2002) Regulation of indoleamine 2,3-dioxygenase expression in simian immunodeficiency virus-infected monkey brains. J Virol. 76: 12233-41. 2. Ueland, T. *et al.* (2009) Dickkopf-1 enhances inflammatory interaction between platelets and endothelial cells and shows increased expression in atherosclerosis. Arterioscler Thromb Vasc Biol. 29: 1228-34

3. Brandtzaeg, P. *et al.* (1992) The leucocyte protein L1 (calprotectin): usefulness as an immunohistochemical marker antigen and putative biological function. Histopathology. 21: 191-6.
4. Gutierrez, M. *et al.* (1999) The detection of CD2+, CD4+, CD8+, and WC1+ T lymphocytes, B cells and macrophages in fixed and paraffin embedded bovine tissue using a range of antigen recovery and signal amplification techniques. Vet Immunol Immunopathol. 71 (3-4): 321-34.
5. Ramsay, A.D. *et al.* (1991) Phenotypic analysis of malignant lymphoma in simian immunodeficiency virus infection using anti-human antibodies. J Pathol. 164 (4): 321-8.
6. Christgau, M. *et al.* (1998) Characterization of immunocompetent cells in the diseased canine periodontium. J Histochem Cytochem. 46 (12): 1443-54.
7. Pérez, J. *et al.* (1999) Immunohistochemical study of the inflammatory infiltrate associated with equine squamous cell carcinoma. J Comp Pathol. 121 (4): 385-97.
8. Nanney, L.B. *et al.* (2008) Calreticulin enhances porcine wound repair by diverse biological effects. Am J Pathol. 173: 610-30.
9. Poncelet, L. *et al.* (2008) Detection of antigenic heterogeneity in feline coronavirus nucleocapsid in feline pyogranulomatous meningoencephalitis. Vet Pathol. 45: 140-53.
10. Sethi, R.S. *et al.* (2010) Immunolocalization of pulmonary intravascular macrophages, TLR4, TLR9 and IL-8 in normal and Pasteurella multocida-infected lungs of water buffalo (Bubalus bubalis). J Comp Pathol. 144: 135-44.
11. Sanchez, J. *et al.* (2011) Microscopical and immunological features of tuberculoid granulomata and cavitary pulmonary tuberculosis in naturally infected goats. J Comp Pathol. 145 (2-3): 107-17.
12. Isling, L.K. *et al.* (2010) Pyelonephritis in slaughter pigs and sows: morphological characterization and aspects of pathogenesis and aetiology. Acta Vet Scand. 52: 48.
13. Vranckx, K. *et al.* (2012) Vaccination reduces macrophage infiltration in bronchus-associated lymphoid tissue in pigs infected with a highly virulent *Mycoplasma hyopneumoniae* strain. BMC Vet Res. 8: 24.
14. Campuzano, O. *et al.* (2012) Arrhythmogenic right ventricular cardiomyopathy: severe structural alterations are associated with inflammation. J Clin Pathol. 65 (12): 1077-83.
15. García-Jiménez, W.L. (2012) Histological and immunohistochemical characterisation of *Mycobacterium bovis* induced granulomas in naturally infected fallow deer (*Dama dama*). Vet Immunol Immunopathol. 149: 66-75.
16. Santana, C.H. *et al.* (2016) Relationship between the inflammatory infiltrate and the degree of differentiation of the canine cutaneous squamous cell carcinoma. Vet Anim Sci. 1-2: 4-8.
17. Masure, D. *et al.* (2013) A Role for Eosinophils in the Intestinal Immunity against Infective *Ascaris suum* Larvae. PLoS Negl Trop Dis. 2013 Mar;7(3): e2138.
18. Tellez, A. *et al.* (2014) Experimental evaluation of efficacy and healing response of everolimus-eluting stents in the familial hypercholesterolemic swine model: a comparative study of bioabsorbable versus durable polymer stent platforms. Coron Artery Dis. 25 (3): 198-207.
19. Collin, N. *et al.* (2009) Sand fly salivary proteins induce strong cellular immunity in a natural reservoir of visceral leishmaniasis with adverse consequences for *Leishmania.* PLoS Pathog. 5(5):e1000441.
20. McCurdy, P. *et al.* (2014) Acute lymphoblastic leukemia in a pygmy hippopotamus (*Hexaprotodon liberiensis*). J Zoo Wildl Med. 45 (4): 906-10.

21. Marcaccini, A. *et al.* (2008) Pseudorabies virus infection in mink: a host-specific pathogenesis. Vet Immunol Immunopathol. 124 (3-4): 264-73.
22. Romero-Palomo, F. *et al.* (2017) Immunopathologic Changes in the Thymus of Calves Pre-infected with BVDV and Challenged with BHV-1. Transbound Emerg Dis. 64 (2): 574-84.
23. Rossi, C.N. *et al.* (2016) *In situ* Cutaneous cellular immune response in dogs naturally infected by visceral leishmaniasis. Rev Inst Med Trop Sao Paulo. 58: .
24. Vrolyk, V. *et al.* (2017) Lung Inflammation Associated With Clinical Acute Necrotizing Pancreatitis in Dogs. Vet Pathol. 54 (1): 129-40.
25. Nelson, M. *et al.* (2014) Comparative experimental subcutaneous glanders and melioidosis in the common marmoset (*Callithrix jacchus*). Int J Exp Pathol. 95 (6): 378-91.
26. Amarilla, S.P. *et al.* (2016) Thymic depletion of lymphocytes is associated with the virulence of PRRSV-1 strains. Vet Microbiol. 188: 47-58.
27. García-Jiménez, W.L. *et al.* (2013) Immunopathology of granulomas produced by *Mycobacterium bovis* in naturally infected wild boar. Vet Immunol Immunopathol. 156 (1-2): 54-63.
28. Zhao, L. *et al.* (2020) Reducing macrophage numbers alleviates temporomandibular joint ankylosis. Cell Tissue Res. 379 (3): 521-36.
29. Lai, H.Y. *et al.* (2017) CCAAT/enhancer-binding protein delta promotes intracellular lipid accumulation in M1 macrophages of vascular lesions. Cardiovasc Res. 113 (11): 1376-88.
30. Wacinski, P. *et al.* (2021) Anti-Inflammatory Effect of Very High Dose Local Vessel Wall Statin Administration: Poly(L,L-Lactide) Biodegradable Microspheres with Simvastatin for Drug Delivery System (DDS). Int J Mol Sci. 22 (14): 7486.
31. Edwards, J.H. *et al.* (2021) Integration and functional performance of a decellularised porcine superflexor tendon graft in an ovine model of anterior cruciate ligament reconstruction. Biomaterials. 279: 121204.
32. Bertolo, P.H.L. *et al.* (2022) Influence of serum progesterone levels on the inflammatory response of female dogs with visceral leishmaniosis. Vet Parasitol. 302: 109658.
33. do Prado Duzanski, A. *et al.* (2022) Cell-mediated immunity and expression of MHC class I and class II molecules in dogs naturally infected by canine transmissible venereal tumor: Is there complete spontaneous regression outside the experimental CTVT? Research in Veterinary Science. 145: 193-204.
34. Vafaee, T. *et al.* (2022) Repopulation of decellularised porcine pulmonary valves in the right ventricular outflow tract of sheep: Role of macrophages. J Tissue Eng. 13: 20417314221102680.
35. Roux, H.M. *et al.* (2023) DNA ultra-sensitive quantification, a technology for studying HIV unintegrated linear DNA. Cell Rep Methods. 3 (4): 100443.
36. Agerholm, J.S. *et al.* (2023) *Actinobacillus lignieresii*-associated myocellulitis of the nasal planum in a Jersey cow Veterinary Record Case Reports. 11 (4) [Epub ahead of print].
37. Blirup-Plum, S.A. *et al.* (2023) Gastro-intestinal lesions are not relatable to diarrhoea or specific pathogens in post-weaning diarrhoea (PWD) in pigs. Acta Vet Scand. 65 (1): 30.
38. Anderson, S.L. *et al.* (2021) Depletion of pulmonary intravascular macrophages rescues inflammation-induced delayed neutrophil apoptosis in horses. Am J Physiol Lung

Cell Mol Physiol. 320 (1): L126-L136.
39. Chen, L.Y. *et al.* (2024) Anti-oxidative and anti-inflammatory effects of *Ginkgo biloba* extract (EGb761) on hindlimb skeletal muscle ischemia-reperfusion injury in rats. Physiol Rep. 12 (11): e16050.
40. Hong, S. *et al.* (2024) Impact of an Injectable Trace Mineral Supplement on the Immune Response and Outcome of *Mannheimia haemolytica* Infection in Feedlot Cattle. Biol Trace Elem Res. Jun 10 [Epub ahead of print].
41. Anderson, S.L. *et al.* (2021) Depletion of pulmonary intravascular macrophages rescues inflammation-induced delayed neutrophil apoptosis in horses. Am J Physiol Lung Cell Mol Physiol. 320 (1): L126-L136.
42. Rodrigues, A. *et al*. (2024) Kupffer Cells and Hepatocytes: A Key Relation in the Context of Canine Leishmaniasis Microorganisms 12 (9) 1887.
43. Rogato, F. *et al.* (2024) Leukemia cutis as a prominent clinical sign in a dog with acute myeloid leukemia. Vet Clin Pathol. 53 (4): 448-57.

Further Reading	1. Burk, J. *et al.* (2013) Equine cellular therapy--from stall to bench to bedside? Cytometry A. 83 (1): 103-13. 2. Piriou-Guzylack, L. (2008) Membrane markers of the immune cells in swine: an update. Vet Res. 39: 54.
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
Health And Safety Information	Material Safety Datasheet documentation #10041 available at: https://www.bio-rad-antibodies.com/SDS/MCA874FT 10041
Regulatory	For research purposes only

Related Products

Recommended Negative Controls

MOUSE IgG1 NEGATIVE CONTROL:FITC (MCA928F)

Recommended Useful Reagents

HUMAN SEROBLOCK (BUF070A)
HUMAN SEROBLOCK (BUF070B)

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

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

'M414899:221214'

Printed on 23 May 2025