Datasheet: MCA1218F

BATCH NUMBER 150979

Description:	MOUSE ANTI PIG CD14:FITC
Specificity:	CD14
Format:	FITC
Product Type:	Monoclonal Antibody
Clone:	MIL2
Isotype:	IgG2b
Quantity:	0.1 mg

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	▪			

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.

Target Species

Pig

Species Cross Reactivity

Reacts with: Human

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 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 0.1mg/ml.
Immunogen	Porcine peripheral blood lymphocytes.
External Database Links	**UniProt:** A2SW51 Related reagents
RRID	AB_808387
Fusion Partners	Spleen cells from immunized Balb/c mice were fused with cells from the P2-X63-Ag.653 mouse myeloma.
Specificity	**Mouse anti Pig CD14, clone MIL2** recognizes porcine CD14. Clone MIL2 was clustered as porcine CD14 at the Third International Workshop on Swine Leukocyte Differentiation Antigens (Haverson *et al.* 2001) . Mouse anti Pig CD14, clone MIL2 immunoprecipitates a protein of ~50 kDa consistent with the expected apparent molecular weight of porcine CD14, and demonstrates the expected CD14 profile by dual labelling and competition studies. Further, pre-incubation of peripheral blood monocytes with MIL2 inhibits the binding of FITC labelled LPS, consistent with masking the CD14 LPS binding site (Thacker *et al.* 2001) . Mouse anti pig CD14, clone MIL2 demonstrates staining of both monocytes and neutrophils in peripheral blood by flow cytometry with a similar expression pattern to the anti human CD14 clone TüK4, lymphocytes and eosinophils are negative for MIL2 staining (Zelnickova *et al.* 2007). Cloning and characterization of porcine CD14 indicates a high degree of both functional and structural conservation when compared to CD14 from other mammalian species, the gene maps to chromosome 2 and is expressed on a wide range of tissues in a manner consistent with expression on myeloid cells. (Petersen *et al.* 2007, Sanz *et al.* 2007).
Flow Cytometry	Use 10ul of the suggested working dilution to label 10^6 cells in 100ul.
References	1. Hauet, T. *et al.* (2000) Trimetazidine reduces renal dysfunction by limiting the cold ischemia/reperfusion injury in autotransplanted pig kidneys. J Am Soc Nephrol. 11: 138-48. 2. Thacker, E. *et al.* (2001) Summary of workshop findings for porcine myelomonocytic markers. Vet Immunol Immunopathol. 80 (1-2): 93-109. 3. Thorgersen, E.B. *et al.* (2010) CD14 inhibition efficiently attenuates early inflammatory and hemostatic responses in *Escherichia coli* sepsis in pigs. FASEB J. 24: 712-22. 4. Goujon, J.M. *et al.* (2000) Influence of cold-storage conditions on renal function of autotransplanted large pig kidneys. Kidney Int. 58: 838-50. 5. Li, Y. *et al.* (2014) Identification of apoptotic cells in the thymus of piglets infected with highly pathogenic porcine reproductive and respiratory syndrome virus. Virus Res. 189:

29-33.
6. Summerfield, A. *et al.* (2003) Porcine peripheral blood dendritic cells and natural interferon-producing cells. Immunology. 110: 440-9.
7. Vanderheijden, N. *et al.* (2003) Involvement of sialoadhesin in entry of porcine reproductive and respiratory syndrome virus into porcine alveolar macrophages. J Virol. 77: 8207-15.
8. Barratt-Due, A. *et al.* (2011) *Ornithodoros moubata* Complement Inhibitor Is an Equally Effective C5 Inhibitor in Pigs and Humans. J Immunol. 187: 4913-9.
9. Hauet, T. *et al.* (2002) Polyethylene glycol reduces the inflammatory injury due to cold ischemia/reperfusion in autotransplanted pig kidneys. Kidney Int. 62: 654-67.
10. Kapetanovic, R. *et al.* (2012) Pig bone marrow-derived macrophages resemble human macrophages in their response to bacterial lipopolysaccharide. J Immunol. 188: 3382-94.
11. Thorgersen, E.B. *et al.* (2009) Inhibition of complement and CD14 attenuates the *Escherichia coli*-induced inflammatory response in porcine whole blood. Infect Immun. 77: 725-32.
12. Zelnickova, P. *et al.* (2007) Intracellular cytokine detection by flow cytometry in pigs: fixation, permeabilization and cell surface staining. J Immunol Methods. 327: 18-29.
13. Facci, M.R. *et al.* (2011) Stability of expression of reference genes in porcine peripheral blood mononuclear and dendritic cells. Vet Immunol Immunopathol. 141: 11-5.
14. Koutná, I. *et al.* (2012) Flow Cytometry Analysis of Intracellular Protein In: Flow Cytometry - Recent Perspectives, Schmid, I. (Ed.), ISBN: 978-953-51-
15. Facci, M.R. *et al.* (2010) A comparison between isolated blood dendritic cells and monocyte-derived dendritic cells in pigs. Immunology. 129: 396-405.
16. Schierack, P. *et al.* (2009) Effects of *Bacillus cereus* var. *toyoi* on immune parameters of pregnant sows. Vet Immunol Immunopathol.127: 26-37.
17. Lundeland, B. *et al.* (2011) Severe gunshot injuries in a porcine model: impact on central markers of innate immunity. Acta Anaesthesiol Scand. 55: 28-34.
18. Thorgersen, E.B. *et al.* (2008) Cyanobacterial LPS antagonist (CyP)-a novel and efficient inhibitor of *Escherichia coli* LPS-induced cytokine response in the pig. Mol Immunol. 45: 3553-7.
19. Schierack, P. *et al.* (2007) *Bacillus cereus* var. *toyoi* enhanced systemic immune response in piglets. Vet Immunol Immunopathol. 118: 1-11.
20. Ondrackova, P. *et al.* (2012) Interaction of porcine neutrophils with different strains of enterotoxigenic *Escherichia coli.* Vet Microbiol. 160: 108-16.
21. Ondrackova, P. *et al.* (2013) Phenotypic characterisation of the monocyte subpopulations in healthy adult pigs and *Salmonella*-infected piglets by seven-colour flow cytometry. Res Vet Sci. 94 (2): 240-5.
22. Vicenova, M. *et al.* (2014) Evaluation of *in vitro* and *in vivo* anti-inflammatory activity of biologically active phospholipids with anti-neoplastic potential in porcine model. BMC Complement Altern Med. 14: 339.
23. Alvarez, B. *et al.* (2015) Phenotypic and functional heterogeneity of $CD169^{+}$ and $CD163^{+}$ macrophages from porcine lymph nodes and spleen. Dev Comp Immunol. 44: 44-9.
24. Moffat, L. *et al.* (2014) Development and characterisation of monoclonal antibodies reactive with porcine CSF1R (CD115). Dev Comp Immunol. 47 (1): 123-8.
25. Kyrova K *et al.* (2014) The response of porcine monocyte derived macrophages and dendritic cells to *Salmonella typhimurium* and lipopolysaccharide. BMC Vet Res. 10: 244.

26. Nguyen, D.N. *et al.* (2016) Oral antibiotics increase blood neutrophil maturation and reduce bacteremia and necrotizing enterocolitis in the immediate postnatal period of preterm pigs. Innate Immun. 22 (1): 51-62.
27. Egge, K.H. *et al.* (2015) Organ inflammation in porcine *Escherichia coli* sepsis is markedly attenuated by combined inhibition of C5 and CD14. Immunobiology. 220 (8): 999-1005.
28. Liu J *et al.* (2016) The Role of Porcine Monocyte Derived Dendritic Cells (MoDC) in the Inflammation Storm Caused by *Streptococcus suis* Serotype 2 Infection. PLoS One. 11 (3): e0151256.
29. Singleton, H. *et al.* (2016) Establishing Porcine Monocyte-Derived Macrophage and Dendritic Cell Systems for Studying the Interaction with PRRSV-1. Front Microbiol. 7: 832.
30. Zemankova, N. *et al.* (2016) Bovine lactoferrin free of lipopolysaccharide can induce a proinflammatory response of macrophages. BMC Vet Res. 12 (1): 251.
31. Auray, G. *et al.* (2016) Characterization and Transcriptomic Analysis of Porcine Blood Conventional and Plasmacytoid Dendritic Cells Reveals Striking Species-Specific Differences. J Immunol. Nov 11. pii: 1600672. [Epub ahead of print]
32. Kavanová L *et al.* (2017) Concurrent infection with porcine reproductive and respiratory syndrome virus and *Haemophilus parasuis* in two types of porcine macrophages: apoptosis, production of ROS and formation of multinucleated giant cells. Vet Res. 48 (1): 28.
33. Bacou, E. *et al.* (2017) β2-adrenoreceptor stimulation dampens the LPS-induced M1 polarization in pig macrophages. Dev Comp Immunol. 76: 169-76.
34. Yang, G. *et al.* (2017) Characterizing porcine invariant natural killer T cells: A comparative study with NK cells and T cells. Dev Comp Immunol. 76: 343-351.
35. Uitterdijk, A. *et al.* (2017) Time course of VCAM-1 expression in reperfused myocardial infarction in swine and its relation to retention of intracoronary administered bone marrow-derived mononuclear cells. PLoS One. 12 (6): e0178779.
36. Sánchez, E.G. *et al.* (2017) Phenotyping and susceptibility of established porcine cells lines to African Swine Fever Virus infection and viral production. Sci Rep. 7 (1): 10369.
37. Fernández-Caballero, T. *et al.* (2018) Phenotypic and functional characterization of porcine bone marrow monocyte subsets. Dev Comp Immunol. 81: 95-104.
38. Sautter, C.A. *et al.* (2018) Phenotypic and functional modulations of porcine macrophages by interferons and interleukin-4. Dev Comp Immunol. 84: 181-92.
39. López, E. *et al.* (2019) Identification of very early inflammatory markers in a porcine myocardial infarction model. BMC Vet Res. 15 (1): 91.

Further Reading

1. Piriou-Guzylack, L. (2008) Membrane markers of the immune cells in swine: an update. Vet Res. 39: 54.
2. Petersen, C.B. *et al.* (2007) Cloning, characterization and mapping of porcine CD14 reveals a high conservation of mammalian CD14 structure, expression and locus organization. Dev Comp Immunol. 31: 729-37.
3. Sanz, G. *et al.* (2007) Molecular cloning, chromosomal location, and expression analysis of porcine CD14. Dev Comp Immunol. 31(7):738-47.

Storage

Store at +4°C or at -20°C if preferred.
Storage in frost-free freezers is not recommended.
This product should be stored undiluted.

	This product is photosensitive and should be protected from light. Avoid repeated freezing and thawing as this may denature the antibody. 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 #10041 available at: https://www.bio-rad-antibodies.com/SDS/MCA1218F 10041
Regulatory	For research purposes only

Related Products

Recommended Negative Controls

MOUSE IgG2b NEGATIVE CONTROL:FITC (MCA691F)

North & South America Tel: +1 800 265 7376 Fax: +1 919 878 3751 Email: antibody_sales_us@bio-rad.com

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