Datasheet: MCA1218PE

BATCH NUMBER 165446

Description:	MOUSE ANTI PIG CD14:RPE
Specificity:	CD14
Format:	RPE
Product Type:	Monoclonal Antibody
Clone:	MIL2
Isotype:	IgG2b
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 - 1/2

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

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 R. Phycoerythrin (RPE) - lyophilized

Reconstitution

Reconstitute with 1 ml distilled water

Max Ex/Em

Fluorophore	Excitation Max (nm)	Emission Max (nm)
RPE 488nm laser	496	578
RPE 561nm laser	546	578

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 (NaN_3) 1% Bovine Serum Albumin 5% Sucrose
Immunogen	Porcine peripheral blood lymphocytes.
External Database Links	**UniProt:** A2SW51 Related reagents
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 assays. 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 $1x10^6$ 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. 197 (12): 4791-806.
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.
40. Forner, R. *et al.* (2021) Distribution difference of colostrum-derived B and T cells subsets in gilts and sows. PLoS One. 16 (5): e0249366.
41. Skovdal, S.M. *et al.* (2019) Inhaled nebulized glatiramer acetate against Gram-negative bacteria is not associated with adverse pulmonary reactions in healthy, young adult female pigs. PLoS One. 14 (10): e0223647.
42. Vreman, S. *et al.* (2018) Neonatal porcine blood derived dendritic cell subsets show activation after TLR2 or TLR9 stimulation. Dev Comp Immunol. 84: 361-70.
43. Lau, C. *et al.* (2020) NHDL, a recombinant V_L/V_H hybrid antibody control for IgG2/4 antibodies. MAbs. 12 (1): 1686319.
44. Nielsen, O.L. *et al.* (2022) A porcine model of subcutaneous *Staphylococcus aureus* infection: a pilot study. APMIS. 130 (7): 359-70.
45. Melgoza-González, A.E. *et al.* (2022) Antigen Targeting of Porcine Skin DEC205+

Dendritic Cells Vaccines. 10 (5): 684.
46. Štěpánová, H. *et al.* (2022) Characterization of Porcine Monocyte-Derived Macrophages Cultured in Serum-Reduced Medium. Biology (Basel). 11(10):1457.
47. Monguió-Tortajada, M. *et al.* (2022) Acellular cardiac scaffolds enriched with MSC-derived extracellular vesicles limit ventricular remodelling and exert local and systemic immunomodulation in a myocardial infarction porcine model. Theranostics. 12 (10): 4656-70.
48. Bettin, L. *et al.* (2023) Co-stimulation by TLR7/8 ligand R848 modulates IFN-γ production of porcine γδ T cells in a microenvironment-dependent manner. Dev Comp Immunol. 138: 104543.
49. Haach, V. *et al.* (2023) A polyvalent virosomal influenza vaccine induces broad cellular and humoral immunity in pigs. Virol J. 20 (1): 181.
50. Li, J. *et al.* (2024) Single-cell transcriptomic analysis reveals transcriptional and cell subpopulation differences between human and pig immune cells. Genes Genomics. 46 (3): 303-22.
51. Álvarez, B. *et al.* (2023) Porcine Macrophage Markers and Populations: An Update. Cells. 12 (16): 2103.
52. Lawrence, J. *et al.* (2024) Porcine Monocyte DNA Traps Formed during Infection with Pathogenic Clostridioides difficile Strains. Pathogens. 13 (3): 228.
53. Auray, G. *et al.* (2020) High-Resolution Profiling of Innate Immune Responses by Porcine Dendritic Cell Subsets *in vitro* and *in vivo*. Front Immunol. 11: 1429.
54. Nieto-Pelegrín, E. *et al.* (2020) Porcine CLEC12B is expressed on alveolar macrophages and blood dendritic cells. Dev Comp Immunol. 111: 103767.
55. Maciag, S. *et al.* (2022) Effects of freezing storage on the stability of maternal cellular and humoral immune components in porcine colostrum. Vet Immunol Immunopathol. 254: 110520.
56. Jarosova, R. *et al.* (2022) Cytokine expression by CD163+ monocytes in healthy and *Actinobacillus pleuropneumoniae*-infected pigs. Res Vet Sci. 152: 1-9.
57. Waddell, L.A. *et al.* (2018) ADGRE1 (EMR1, F4/80) Is a Rapidly-Evolving Gene Expressed in Mammalian Monocyte-Macrophages. Front Immunol. 9: 2246.
58. Boschetto, F. *et al.* (2024) Protocol for extracting and isolating porcine bone-marrow-derived macrophages from ribs. STAR Protoc. 5 (2): 103085.

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

Prior to reconstitution store at +4°C.
After reconstitution 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/MCA1218PE
Regulatory	For research purposes only

Related Products

Recommended Negative Controls

MOUSE IgG2b NEGATIVE CONTROL:RPE (MCA691PE)

Product inquiries: www.bio-rad-antibodies.com/technical-support

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