

Datasheet: MCA1749PE

Description:	MOUSE ANTI PIG CD4 ALPHA:RPE
Specificity:	CD4 ALPHA
Other names:	CD4
Format:	RPE
Product Type:	Monoclonal Antibody
Clone:	MIL17
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

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		
Product Form	Purified IgG conjugated to R. Phycoerythrin (RPE) - lyophilized		
Reconstitution	Reconstitute with 1.0 ml distilled water		
Max Ex/Em	Fluorophore	Excitation Max (nm)	Emission Max (nm)
	RPE 488nm laser	496	578
Preparation	Purified IgG prepared by affinity chromatography on Protein A from tissue culture supernatant		
Buffer Solution	Phosphate buffered saline		
Preservative	0.09% Sodium Azide		
Stabilisers	1%	Bovine Serum Albumin	
	5%	Sucrose	

Immunogen	Leucocytes isolated from porcine gut lamina propria.
RRID	AB_323455
Specificity	<p>Mouse anti Porcine CD4 alpha, clone MIL17 recognizes a ~55 kDa porcine homologue to the human CD4 antigen found on the surface of helper-T cells. MIL-17 was confirmed as a member of the CD4 alpha cluster at the 'Third International Workshop on Swine Leukocyte Differentiation Antigens' (Haverson et al. 2001). Porcine CD4 is a type 1 trans-membrane member of the immunoglobulin superfamily.</p> <p>Pigs appear unusual amongst mammalian species as they appear to have four populations of resting T lymphocytes. In addition to the two populations of mutually exclusive CD4+/CD8- and CD4-/CD8+ lymphocytes, they also appear to have significant populations of CD4-/CD8- and CD4+/CD8+ cells. Lymphoblasts with a double positive phenotype have been described in other species but this is not the case for mature T lymphocytic cells (Saalmuller et al. 1987)</p> <p>Mouse anti Pig CD4 alpha, clone MIL17 stains a population of cells with characteristic lymphocyte morphology in immunohistochemistry (Inman et al. 2010).</p>
Flow Cytometry	Use 10ul of the suggested working dilution to label 10 ⁶ cells in 100ul.
References	<ol style="list-style-type: none"> 1. Saalmüller A et al. (2001) Summary of workshop findings for porcine T-lymphocyte-specific monoclonal antibodies. Vet Immunol Immunopathol. 80 (1-2): 35-52. 2. Castellano, G. et al. (2010) Therapeutic targeting of classical and lectin pathways of complement protects from ischemia-reperfusion-induced renal damage. Am J Pathol. 176: 1648-59. 3. Inman, C.F. et al. (2010) Dendritic cells interact with CD4 T cells in intestinal mucosa. J Leukoc Biol. 88 (3): 571-8. 4. Kick AR et al. (2011) Evaluation of peripheral lymphocytes after weaning and vaccination for <i>Mycoplasma hyopneumoniae</i>. Res Vet Sci. 91 (3): e68-72. 5. Kick, A.R. et al. (2012) Effects of stress associated with weaning on the adaptive immune system in pigs. J Anim Sci. 90: 649-56. 6. Goujon, J.M. et al. (2000) Influence of cold-storage conditions on renal function of autotransplanted large pig kidneys. Kidney Int. 58: 838-50. 7. Tambuyzer BR et al. (2012) Osteopontin alters the functional profile of porcine microglia <i>in vitro</i>. Cell Biol Int. 36 (12): 1233-8. 8. Tuchscherer, M. et al. (2012) Effects of inadequate maternal dietary protein:carbohydrate ratios during pregnancy on offspring immunity in pigs. BMC Vet Res. 8: 232. 9. Cao, D. et al. (2010) Synthetic innate defence regulator peptide enhances in vivo immunostimulatory effects of CpG-ODN in newborn piglets. Vaccine. 28: 6006-13. 10. Clapperton, M. et al. (2005) Associations of weight gain and food intake with leukocyte sub-sets in Large White pigs Livestock Production Science 96: 249-60 11. Clapperton, M. et al. (2005) Innate immune traits differ between Meishan and Large White pigs. Vet Immunol Immunopathol. 104: 131-44. 12. Clapperton, M. et al. (2008) Pig peripheral blood mononuclear leucocyte subsets are

- heritable and genetically correlated with performance. [Animal. 2: 1575-84.](#)
13. Faure, J.P. *et al.* (2002) Polyethylene glycol reduces early and long-term cold ischemia-reperfusion and renal medulla injury. [J Pharmacol Exp Ther. 2002 Sep;302\(3\):861-70.](#)
14. Faure, J.P. *et al.* (2004) Evidence for protective roles of polyethylene glycol plus high sodium solution and trimetazidine against consequences of renal medulla ischaemia during cold preservation and reperfusion in a pig kidney model. [Nephrol Dial Transplant. 19: 1742-51.](#)
15. Inman, C.F. *et al.* (2012) Neonatal colonisation expands a specific intestinal antigen-presenting cell subset prior to CD4 T-cell expansion, without altering T-cell repertoire. [PLoS One. 7\(3\): e33707.](#)
16. Kick, A.R. *et al.* (2012) Effects of stress associated with weaning on the adaptive immune system in pigs. [J Anim Sci. 90: 649-56.](#)
17. Langerhuus, S.N. *et al.* (2010) Brief report: biomarkers of aortic vascular prosthetic graft infection in a porcine model with *Staphylococcus aureus*. [Eur J Clin Microbiol Infect Dis. 29: 1453-6.](#)
18. Lu, X. *et al.* (2012) Genome-wide association study for T lymphocyte subpopulations in swine. [BMC Genomics. 13: 488.](#)
19. Monroy-Salazar, H.G. *et al.* (2012) Effects of a live yeast dietary supplement on fecal coliform counts and on peripheral blood CD4+ and CD8+ lymphocyte subpopulations in nursery pigs. [J Swine Health Prod 20: 276-282.](#)
20. Shi, K. *et al.* (2008) Changes in peripheral blood leukocyte subpopulations in piglets co-infected experimentally with porcine reproductive and respiratory syndrome virus and porcine circovirus type 2. [Vet Microbiol. 129: 367-77.](#)
21. Spreeuwenberg, M.A. *et al.* (2001) Small intestine epithelial barrier function is compromised in pigs with low feed intake at weaning. [J Nutr. 131: 1520-7.](#)
22. Tambuyzer, B.R. *et al.* (2012) Osteopontin alters the functional profile of porcine microglia in vitro. [Cell Biol Int. 36: 1233-8.](#)
23. 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.](#)
24. Kvist, P.H. *et al.* (2010) Effect of subcutaneous glucose sensor implantation on skin mRNA expression in pigs. [Diabetes Technol Ther. 12: 791-9.](#)
25. Lefevre, E.A. *et al.* (2012) Immune responses in pigs vaccinated with adjuvanted and non-adjuvanted A(H1N1)pdm/09 influenza vaccines used in human immunization programmes. [PLoS One. 7\(3\): e32400.](#)
26. Akershoek, J.J. *et al.* (2016) Cell therapy for full-thickness wounds: are fetal dermal cells a potential source? [Cell Tissue Res. 364 \(1\): 83-94.](#)
27. 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.](#)
28. Liermann, W. *et al.* (2017) Effects of two commercial diets and technical feed treatment on stomach lesions and immune system of fattening pigs. [J Anim Physiol Anim Nutr \(Berl\). 101 \(5\): e414-26.](#)
29. Gardner, D.S. *et al.* (2016) Remote effects of acute kidney injury in a porcine model. [Am J Physiol Renal Physiol. 310 \(4\): F259-71.](#)
30. Hemmink, J.D. *et al.* (2016) Distinct immune responses and virus shedding in pigs following aerosol, intra-nasal and contact infection with pandemic swine influenza A virus,

A(H1N1)09. [Vet Res. 47 \(1\): 103.](#)

31. Dąbrowski, M. *et al.* (2017) The Effect of Deoxynivalenol on Selected Populations of Immunocompetent Cells in Porcine Blood-A Preliminary Study. [Molecules. 22 \(5\)Apr 26 \[Epub ahead of print\].](#)

32. Hsu, W.T. *et al.* (2013) Prostaglandin E2 potentiates mesenchymal stem cell-induced IL-10+IFN- γ +CD4+ regulatory T cells to control transplant arteriosclerosis. [J Immunol. 190 \(5\): 2372-80.](#)

33. Matsubara, T. *et al.* (2015) Identification of a CD4 variant in Microminipigs not detectable with available anti-CD4 monoclonal antibodies. [Vet Immunol Immunopathol. 168 \(3-4\): 176-83.](#)

34. Hu, Z. *et al.* (2019) Genomic variant in porcine TNFRSF1A gene and its effects on TNF signaling pathway *in vitro*. [Gene. 700: 105-9.](#)

35. Fogle, J.E. *et al.* (2019) Antibiotic Therapy Does Not Alter the Humoral Response to Vaccination for Porcine Circovirus 2 in Weaned Pigs. [Vet Sci. 6\(2\): 51.](#)

36. Forner, R. *et al.* (2021) Distribution difference of colostrum-derived B and T cells subsets in gilts and sows. [PLoS One. 16 \(5\): e0249366.](#)

37. Christoforidou, Z. *et al.* (2019) Sexual Dimorphism in Immune Development and in Response to Nutritional Intervention in Neonatal Piglets. [Front Immunol. 10: 2705.](#)

38. López, E. *et al.* (2019) Identification of very early inflammatory markers in a porcine myocardial infarction model. [BMC Vet Res. 15 \(1\): 91.](#)

39. Liu, K.Y. *et al.* (2021) Fallopian tube stem cell medium of porcine and bovine: *In vitro*. regenerative effect on maturation and parthenogenesis of porcine oocytes. [Res Vet Sci. 140: 83-90.](#)

40. Giese, I.M. *et al.* (2020) Chronic Hyperglycemia Drives Functional Impairment of Lymphocytes in Diabetic *INS*^{C94Y} Transgenic Pigs. [Front Immunol. 11: 607473.](#)

41. Nielsen, O.L. *et al.* (2021) A porcine model of subcutaneous *Staphylococcus aureus*. infection: a pilot study. [APMIS. Mar 01 \[Epub ahead of print\].](#)

Further Reading 1. Piriou-Guzylack, L. (2008) Membrane markers of the immune cells in swine: an update. [Vet Res. 39: 54.](#)

Storage Prior to reconstitution store at +4°C. Following 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: 20487: <https://www.bio-rad-antibodies.com/uploads/MSDS/20487.pdf>

Regulatory For research purposes only

Related Products

Recommended Negative Controls

MOUSE IgG2b NEGATIVE CONTROL:RPE (MCA691PE)

North & South Tel: +1 800 265 7376

America 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

'M378567:210222'

Printed on 07 Jan 2022

© 2022 Bio-Rad Laboratories Inc | [Legal](#) | [Imprint](#)