# Datasheet: MCA1749GA

## BATCH NUMBER 156181

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| **Description:** | MOUSE ANTI PIG CD4 ALPHA |
| **Specificity:** | CD4 ALPHA |
| **Other names:** | CD4 |
| **Format:** | Purified |
| **Product Type:** | Monoclonal Antibody |
| **Clone:** | MIL17 |
| **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 | ▪ | | | 1/25 - 1/200 |
| Immunohistology - Frozen (1) | ▪ | | | |
| Immunohistology - Paraffin | | ▪ | | |
| ELISA | | | ▪ | |
| Immunoprecipitation | | | ▪ | |
| Western Blotting | | | ▪ | |

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.

(1)**The epitope recognised by this antibody is reported to be sensitive to formaldehyde fixation and tissue processing. Bio-Rad recommends the use of acetone fixation for frozen sections.**

**Target Species**

Pig

**Product Form**

Purified IgG - liquid

**Preparation**

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

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| **Buffer Solution** | Phosphate buffered saline |
| **Preservative Stabilisers** | 0.09% Sodium Azide ($NaN_3$) |
| **Carrier Free** | Yes |
| **Approx. Protein Concentrations** | IgG concentration 1.0 mg/ml |
| **Immunogen** | Leucocytes isolated from porcine gut lamina propria. |
| **Specificity** | **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.<br><br>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 calls (Saalmuller *et al.* 1987)<br><br>Mouse anti Pig CD4 alpha, clone MIL17 stains a population of cells with characteristic lymphocyte morphology in immunohistochemistry (Inman *et al.* 2010). |
| **Flow Cytometry** | Use 10ul of the suggested working dilution to label $10^6$ cells in 100ul |
| **References** | 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.<br>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.<br>3. Inman, C.F. *et al.* (2010) Dendritic cells interact with CD4 T cells in intestinal mucosa. J Leukoc Biol. 88 (3): 571-8.<br>4. Kick AR *et al.* (2011) Evaluation of peripheral lymphocytes after weaning and vaccination for *Mycoplasma hyopneumoniae*. Res Vet Sci. 91 (3): e68-72.<br>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.<br>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.<br>7. Tambuyzer BR *et al.* (2012) Osteopontin alters the functional profile of porcine microglia *in vitro*. Cell Biol Int. 36 (12): 1233-8.<br>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. López, E. *et al.* (2019) Identification of very early inflammatory markers in a porcine myocardial infarction model. BMC Vet Res. 15 (1): 91.
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)May 30 [Epub ahead of print].

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| **Further Reading** | 1. Piriou-Guzylack, L. (2008) Membrane markers of the immune cells in swine: an update. Vet Res. 39: 54. |
| **Storage** | Store at +4°C or at -20°C if preferred.<br><br>This product should be stored undiluted.<br><br>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** | 12 months from date of despatch |
| **Health And Safety Information** | Material Safety Datasheet documentation #10040 available at:<br>https://www.bio-rad-antibodies.com/SDS/MCA1749GA<br>10040 |
| **Regulatory** | For research purposes only |

## Related Products

### Recommended Secondary Antibodies

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| Rabbit Anti Mouse IgG (STAR12...) | RPE |
| Goat Anti Mouse IgG IgA IgM (STAR87...) | HRP |
| Goat Anti Mouse IgG (STAR76...) | RPE |

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| Goat Anti Mouse IgG (STAR70...) | FITC |
| Goat Anti Mouse IgG (H/L) (STAR117...) | Alk. Phos., DyLight®488, DyLight®550, DyLight®650, DyLight®680, DyLight®800, FITC, HRP |
| Rabbit Anti Mouse IgG (STAR9...) | FITC |
| Goat Anti Mouse IgG (STAR77...) | HRP |
| Goat Anti Mouse IgG (Fc) (STAR120...) | FITC, HRP |
| Rabbit Anti Mouse IgG (STAR13...) | HRP |

## Recommended Negative Controls

MOUSE IgG2b NEGATIVE CONTROL (MCA691)

## Recommended Useful Reagents

MOUSE ANTI PIG CD45 (MCA1222GA)
MOUSE ANTI PIG wCD8 ALPHA (MCA1223GA)
RAT ANTI HUMAN CD3 (MCA1477)


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