Datasheet: MCA1039F

BATCH NUMBER 163750

Description:	RAT ANTI DOG CD8:FITC
Specificity:	CD8
Format:	FITC
Product Type:	Monoclonal Antibody
Clone:	YCATE55.9
Isotype:	IgG1
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	▪			Neat - 1/5

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 systems with appropriate negative/positive controls.

Target Species

Dog

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 0.1 mg/ml

Immunogen	Canine CD8 alpha chimaeric human IgG1 Fc fusion protein.
External Database Links	**UniProt:** P33706 Related reagents **Entrez Gene:** 403157 CD8A Related reagents
RRID	AB_324550
Fusion Partners	Spleen cells from immunized DA rat were fused with cells of the Y3/Ag1.2.3 rat myeloma cell line.
Specificity	**Rat anti Dog CD8 antibody, clone YCATE55.9** was clustered as Canine CD8 in the First Canine Leukocyte Antigen Workshop (Cobbold *et al.* 1994). YCATE55.9 reacts with a rat cell line transfected with cDNA for canine CD8α (Gorman *et al.* 1994) and blocks MHC class I dependant T-cell responses *in vitro* and *in vivo*. Rat anti Dog CD8, clone YCATE55.9 has been shown to deplete circulating CD8+ T cells when administered to dogs *in vivo*. (Watson *et al.* 1993) Reduced levels of circulating CD8+ T cells has been associated with decreased survival times for dogs with osteosarcoma (Biller *et al.* 2010).
Flow Cytometry	Use 10µl of the suggested working dilution to label 10^6 cells in 100µl
References	1. Cobbold, S. & Metcalfe, S. (1994) Monoclonal antibodies that define canine homologues of human CD antigens: summary of the First International Canine Leukocyte Antigen Workshop (CLAW). Tissue Antigens. 43 (3): 137-54. 2. Gorman, S.D. *et al.* (1994) Isolation and expression of cDNA encoding the canine CD4 and CD8 alpha antigens. Tissue Antigens. 43 (3): 184-8. 3. Watson, C.J. *et al.* (1993) CD4 and CD8 monoclonal antibody therapy: strategies to prolong renal allograft survival in the dog. Br J Surg. 80 (11): 1389-92. 4. Papadogiannakis, E.I. *et al.* (2009) Determination of intracellular cytokines IFN-gamma and IL-4 in canine T lymphocytes by flow cytometry following whole-blood culture. Can J Vet Res. 73 (2): 137-43. 5. Benyacoub, J. *et al.* (2003) Supplementation of food with *Enterococcus faecium* (SF68) stimulates immune functions in young dogs. J Nutr. 133: 1158-62. 6. Bird, R.C. *et al.* (2010) An autologous dendritic cell canine mammary tumor hybrid-cell fusion vaccine. Cancer Immunol Immunother. 60: 87-97. 7. Bund, D. *et al.* (2010) Canine-DCs using different serum-free methods as an approach to provide an animal-model for immunotherapeutic strategies. Cell Immunol. 263: 88-98. 8. Estrela-Lima, A. *et al.* (2010) Immunophenotypic features of tumor infiltrating lymphocytes from mammary carcinomas in female dogs associated with prognostic factors and survival rates. BMC Cancer. 10: 256. 9. Huang, Y.C. *et al.* (2008) CD5-low expression lymphocytes in canine peripheral blood show characteristics of natural killer cells. J Leukoc Biol. 84: 1501-10. 10. Kornegay, J.N. *et al.* (2010) Widespread muscle expression of an AAV9 human

mini-dystrophin vector after intravenous injection in neonatal dystrophin-deficient dogs. Mol Ther. 18: 1501-8.
11. Pichavant, C. *et al.* (2010) Expression of dog microdystrophin in mouse and dog muscles by gene therapy. Mol Ther. 18: 1002-9.
12. Pinheiro, D. *et al* (2011) Phenotypic and functional characterization of a CD4(+) CD25(high) FOXP3(high) regulatory T-cell population in the dog. Immunology. 132: 111-22.
13. Reis, A.B. *et al.* (2006) Phenotypic features of circulating leucocytes as immunological markers for clinical status and bone marrow parasite density in dogs naturally infected by *Leishmania chagasi*. Clin Exp Immunol. 146: 303-11.
14. Figueiredo, M.M. *et al.* (2014) Expression of Regulatory T Cells in Jejunum, Colon, and Cervical and Mesenteric Lymph Nodes of Dogs Naturally Infected with *Leishmania infantum*. Infect Immun. 82: 3704-12.
15. Costa-Pereira, C. *et al.* (2015) One-year timeline kinetics of cytokine-mediated cellular immunity in dogs vaccinated against visceral leishmaniasis. BMC Vet Res. 11 (1): 92.
16. Schaut, R.G. *et al.* (2016) Regulatory IgDhi B Cells Suppress T Cell Function via IL-10 and PD-L1 during Progressive Visceral Leishmaniasis. J Immunol. 196 (10): 4100-9.
17. Tagawa, M. *et al.* (2016) Evaluation of Costimulatory Molecules in Peripheral Blood Lymphocytes of Canine Patients with Histiocytic Sarcoma. PLoS One. 11 (2): e0150030.
18. Riondato, F. *et al.* (2016) Analytical and diagnostic validation of a flow cytometric strategy to quantify blood and marrow infiltration in dogs with large B-cell lymphoma. Cytometry B Clin Cytom. 90 (6): 525-30.
19. Cortese, L. *et al.* (2015) An immune-modulating diet increases the regulatory T cells and reduces T helper 1 inflammatory response in Leishmaniosis affected dogs treated with standard therapy. BMC Vet Res. 11: 295.
20. Miller, J. *et al.* (2015) Humoral and Cellular Immune Response in Canine Hypothyroidism. J Comp Pathol. 153 (1): 28-37.
21. Riondato, F. *et al.* (2016) Identification of a suitable internal control for fluorescence analysis on canine peripheral blood samples. Vet Immunol Immunopathol. 172: 38-42.
22. Martini, V. *et al.* (2016) Canine small clear cell/T-zone lymphoma: clinical presentation and outcome in a retrospective case series. Vet Comp Oncol. 14 Suppl 1: 117-26.
23. Gelain, M.E. *et al.* (2014) CD44 in canine leukemia: analysis of mRNA and protein expression in peripheral blood. Vet Immunol Immunopathol. 159 (1-2): 91-6.
24. Duz AL *et al.* (2014) The TcI and TcII *Trypanosoma cruzi* experimental infections induce distinct immune responses and cardiac fibrosis in dogs. Mem Inst Oswaldo Cruz. 109 (8): 1005-13.
25. Munhoz, T.D.*et al.* (2016) Regulatory T cells in dogs with multicentric lymphoma: peripheral blood quantification at diagnosis and after initial stage chemotherapy Arq. Bras. Med. Vet. Zootec. 68 (1): 1-9.
26. Bonnefont-Rebeix, C. *et al.* (2016) Characterization of a novel canine T-cell line established from a spontaneously occurring aggressive T-cell lymphoma with large granular cell morphology. Immunobiology. 221 (1): 12-22.
27. Viana, K.F. *et al.* (2015) Setting the proportion of CD4+ and CD8+ T-cells co-cultured with canine macrophages infected with *Leishmania chagasi*. Vet Parasitol. 211 (3-4): 124-32.
28. Bromberek, J.L. *et al.* (2016) Breed Distribution and Clinical Characteristics of B Cell Chronic Lymphocytic Leukemia in Dogs. J Vet Intern Med. 30 (1): 215-22.

29. Mie, K. *et al.* (2016) Influence of transfusion of lymphokine-activated T killer cells on inflammatory responses in dogs after laparotomy. J Vet Med Sci. 78 (4): 579-85.
30. Miglio, A. *et al.* (2014) Acute undifferentiated leukaemia in a dog. Aust Vet J. 92 (12): 499-503.
31. Villaescusa, A. *et al.* (2015) Effects of doxycycline on haematology, blood chemistry and peripheral blood lymphocyte subsets of healthy dogs and dogs naturally infected with *Ehrlichia canis*. Vet J. 204 (3): 263-8.
32. Fiuza JA *et al.* (2015) Vaccination using live attenuated *Leishmania donovani* centrin deleted parasites induces protection in dogs against *Leishmania infantum*. Vaccine. 33 (2): 280-8.
33. Perosso, J. *et al.* (2014) Alteration of sFAS and sFAS ligand expression during canine visceral leishmaniosis. Vet Parasitol. 205 (3-4): 417-23.
34. Heinrich, F. *et al.* (2015) Immunophenotyping of immune cell populations in the raccoon (*Procyon lotor*). Vet Immunol Immunopathol. 168 (3-4): 140-6.
35. Poggi, A. *et al.* (2017) Prognostic significance of Ki67 evaluated by flow cytometry in dogs with high-grade B-cell lymphoma. Vet Comp Oncol. 15 (2): 431-40.
36. McGill, J.L. *et al.* (2016) Vaccination with an Attenuated Mutant of Ehrlichia chaffeensis Induces Pathogen-Specific CD4+ T Cell Immunity and Protection from Tick-Transmitted Wild-Type Challenge in the Canine Host. PLoS One. 11 (2): e0148229.
37. Villaescusa, A. *et al.* (2012) Evaluation of peripheral blood lymphocyte subsets in family-owned dogs naturally infected by *Ehrlichia canis*. Comp Immunol Microbiol Infect Dis. 35 (4): 391-6.
38. Schaut RG *et al.* (2016) Recovery of antigen-specific T cell responses from dogs infected with *Leishmania (L.) infantum* by use of vaccine associated TLR-agonist adjuvant. Vaccine. 34 (44): 5225-34.
39. Miranda, S. *et al.* (2007) Characterization of circulating lymphocyte subpopulations in canine leishmaniasis throughout treatment with antimonials and allopurinol. Vet Parasitol. 144 (3-4): 251-60.
40. Viana, K.F. *et al.* (2016) Application of rapid in vitro co-culture system of macrophages and T-cell subsets to assess the immunogenicity of dogs vaccinated with live attenuated *Leishmania donovani* centrin deleted parasites (LdCen-/-). Parasit Vectors. 9: 250.
41. Michael, H.T. *et al.* (2013) Isolation and characterization of canine natural killer cells. Vet Immunol Immunopathol. 155 (3): 211-7.
42. Mitchell, L. *et al.* (2012) Induction of remission results in spontaneous enhancement of anti-tumor cytotoxic T-lymphocyte activity in dogs with B cell lymphoma. Vet Immunol Immunopathol. 145 (3-4): 597-603.
43. DaSilva, A.V.A. *et al.* (2018) Morphophysiological changes in the splenic extracellular matrix of *Leishmania infantum*-naturally infected dogs is associated with alterations in lymphoid niches and the CD4+ T cell frequency in spleens. PLoS Negl Trop Dis. 12 (4): e0006445.
44. Roatt, B.M.*et al.* (2017) A Vaccine Therapy for Canine Visceral Leishmaniasis Promoted Significant Improvement of Clinical and Immune Status with Reduction in Parasite Burden. Front Immunol. 8: 217.
45. Aricò, A. *et al.* (2013) The role of vascular endothelial growth factor and matrix metalloproteinases in canine lymphoma: *in vivo* and *in vitro* study. BMC Vet Res. 9: 94.
46. Aguiar-Soares, R.D.O. *et al.* (2020) Phase I and II Clinical Trial Comparing the LBSap, Leishmune®, and Leish-Tec® Vaccines against Canine Visceral Leishmaniasis. Vaccines

(Basel). 8 (4): 690.
47. Martini, V. *et al.* (2019) Prognostic role of non-neoplastic lymphocytes in lymph node aspirates from dogs with diffuse large B-cell lymphoma treated with chemo-immunotherapy. Res Vet Sci. 125: 130-5.
48. Martins, G.C. *et al.* (2018) Clinical-pathological and immunological biomarkers in dogs with atopic dermatitis. Vet Immunol Immunopathol. 205: 58-64.
49. Anai, L.A. *et al.* (2017) Quantification of Treg cells in peripheral blood and lymph nodes of dogs with multicentric lymphoma Arq. Bras. Med. Vet. Zootec. 69 (6): 1496-502.
50. Wolf-Ringwall, A. *et al.* (2020) Prospective evaluation of flow cytometric characteristics, histopathologic diagnosis and clinical outcome in dogs with naïve B-cell lymphoma treated with a 19-week CHOP protocol. Vet Comp Oncol. 18 (3): 342-52.
51. Sayag, D. *et al.* (2020) Proof-of-concept study: Evaluation of plasma and urinary electrolytes as markers of response to L-asparaginase therapy in dogs with high-grade lymphoma. Vet Clin Pathol. 49 (3): 476-83.
52. Grudzien, M. *et al.* (2021) A newly established canine NK-type cell line and its cytotoxic properties. Vet Comp Oncol. 19 (3): 567-77.
53. Pellin, M.A. *et al.* (2017) Safety evaluation of combination doxorubicin and toceranib phosphate (Palladia®) in tumour bearing dogs: a phase I dose-finding study. Vet Comp Oncol. 15 (3): 919-31.
54. Kanei, T. *et al.* (2022) Expression and functional analysis of chemokine receptor 7 in canine lymphoma cell lines. J Vet Med Sci. 84 (1): 25-30.
55. Lee, S.H. *et al.* (2021) Safety and immunological effects of recombinant canine IL-15 in dogs. Cytokine. 148: 155599.
56. Knebel, A. *et al.* (2021) Measurement of canine Th17 cells by flow cytometry. Vet Immunol Immunopathol. 243: 110366.
57. 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.
58. Bragato, J.P. *et al.* (2022) miRNA-21 regulates CD69 and IL-10 expression in canine leishmaniasis. PLoS One. 17 (3): e0265192.
59. Riccardo, F. *et al.* (2022) Antigen mimicry as an effective strategy to induce CSPG4-targeted immunity in dogs with oral melanoma: a veterinary trial. J Immunother Cancer. 10 (5): e004007.
60. Troupel, T. *et al.* (2022) Generalised idiopathic polymyositis mimicking masticatory myositis in a dog Vet Rec Case Rep. 10: e452.
61. Konno, H. *et al.* (2022) An experimental challenge model for *Leishmania donovani in* beagle dogs, showing a similar pattern of parasite burden in the peripheral blood and liver. Parasitol Res. 121 (12): 3569-79.
62. Matralis, D.T. *et al.* (2023) Intracellular IFN-γ and IL-4 levels of CD4 + and CD8 + T cells in the peripheral blood of naturally infected (*Leishmania infantum*) symptomatic dogs before and following a 4-week treatment with miltefosine and allopurinol: a double-blinded, controlled and cross-sectional study. Acta Vet Scand. 65 (1): 2.
63. Hamouzová, P. *et al.* (2023) Lymphocyte immunophenotyping in dogs with lymphopenia of common causes. Vet Immunol Immunopathol. 261: 110620.
64. Bencze, M. *et al.* (2023) Receptor interacting protein kinase-3 mediates both myopathy and cardiomyopathy in preclinical animal models of Duchenne muscular

dystrophy. J Cachexia Sarcopenia Muscle.14 (6): 2520-31.
65. Zwueste, D.M. *et al.* (2023) Oral cytarabine ocfosfate pharmacokinetics and assessment of leukocyte biomarkers in normal dogs. J Vet Intern Med. 37 (6): 2429-42.
66. Martini, V. *et al.* (2018) A retrospective study of flow cytometric characterization of suspected extranodal lymphomas in dogs. J Vet Diagn Invest. 30 (6): 830-6.
67. Lee, G.W. *et al.* (2021) Case Report: Long-Term Survival of a Dog With Chronic Lymphocytic Leukemia Treated With Chlorambucil, Prednisolone, and Imatinib. Front Vet Sci. 8: 625527.
68. Sainz, Á. *et al.* (2021) Effect of chemically modified tetracycline-8 (CMT-8) on hematology, blood chemistry, cytokines and peripheral blood lymphocyte subsets of healthy dogs. Res Vet Sci. 136: 200-8.
69. Hughes, K. *et al.* (2024) Canine T zone lymphoma is a tumor of mature, previously activated αβ T cells Vet Immunol Immunopathol. 110725.
70. Anthonyraj, S. *et al.* (2024) Chicory root powder included as a prebiotic in different cereal-based diets for dogs: Influences on gut health, metabolic and immunological status Bioactive Carbohydrates and Dietary Fibre. : 100414.
71. Sheng, R. *et al.* (2023) Prognostic significance of CD25 expression in dogs with a noninvasive diagnosis of B-cell lymphoma treated with CHOP chemotherapy. Vet Comp Oncol. 21 (1): 28-35.
72. Miguelena Chamorro, B. *et al.* (2023) Characterization of Canine Peyer's Patches by Multidimensional Analysis: Insights from Immunofluorescence, Flow Cytometry, and Single-Cell RNA Sequencing. Immunohorizons. 7 (11): 788-805.

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/MCA1039F 10041
Regulatory	For research purposes only

Related Products

Recommended Negative Controls

RAT IgG1 NEGATIVE CONTROL:FITC (MCA6004F)

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

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