# Datasheet: MCA1477FT

| Description: | RAT ANTI HUMAN CD3:FITC |
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| **Specificity:** | CD3 |
| **Format:** | FITC |
| **Product Type:** | Monoclonal Antibody |
| **Clone:** | CD3-12 |
| **Isotype:** | IgG1 |
| **Quantity:** | 25 µg |

## Product Details

| **RRID** | AB_1101849 |
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| **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. |
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| | Yes | No | Not Determined | Suggested Dilution |
|---|---|---|---|---|
| Flow Cytometry (1) | ▪ | | | 1/5 - 1/10 |

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.

(1)**Membrane permeabilization is required for this application. Bio-Rad recommends the use of Leucoperm™ (BUF09) for this purpose.**

| **Target Species** | Human |
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| **Species Cross Reactivity** | Reacts with: Bovine, Dog, Horse, Rhesus Monkey, Pig, Chicken, Mouse, Duck, Koala, Harbour Porpoise, Alpaca, Cynomolgus monkey, Spotted Hyena, Sea Lion, Cat, Amazon Parrot, Raccoon, Great horned owl (Bubo virginianus), Bullfrog, Xenopus, Rabbit<br>Based on sequence similarity, is expected to react with:Mammals, Birds, Amphibia<br>**N.B.** Antibody reactivity and working conditions may vary between species. |
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| **Product Form** | Purified IgG conjugated to Fluorescein Isothiocyanate Isomer 1 (FITC) - liquid |
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| **Max Ex/Em** | | | |
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| Fluorophore | Excitation Max (nm) | Emission Max (nm) |
|---|---|---|
| FITC | 490 | 525 |

| **Preparation** | Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant |
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| **Buffer Solution** | Phosphate buffered saline |
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| **Preservative Stabilisers** | 0.09% Sodium Azide<br>1% Bovine Serum Albumin |
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| **Approx. Protein Concentrations** | IgG concentration 0.1 mg/ml |
| **Immunogen** | Synthetic peptide sequence derived from cytoplasmic epitope of CD3 (Glu-Arg-Pro-Pro-Pro-Val-Pro-Asn-Pro-Asp-Tyr-Glu-Pro-Cys) (ERPPPVPNPDYEPC ) |
| **External Database Links** | **UniProt:**<br>P07766      Related reagents<br><br>**Entrez Gene:**<br>916    CD3E    Related reagents |
| **Synonyms** | T3E |
| **Specificity** | **Rat anti Human CD3, clone CD3-12** raised against a peptide representing an invariant cytoplasmic sequence within the CD3ε chain recognizes human CD3ε. CD3 is a multimeric protein complex composed of four distinct polypeptide chains (ε, γ, δ, ζ) that assemble and function as three pairs of dimers (εγ, εδ, ζζ). The CD3 complex serves as a T cell co-receptor that associates non-covalently with the T cell receptor (TCR) (Malissen 2008; Guy and Vignali 2009; Smith-Garvin et al. 2009). CD3 is a defining feature of cells belonging to the T cell lineage and can therefore be used as T cell marker.<br><br>As Rat anti Human CD3, clone CD3-12 has been specifically raised against an epitope within the epsilon peptide chain, highly conserved among species clone CD3-12 has a very broad species crossreactivity for the CD3 marker. (Jones et al. 1993; Kothlow et al. 2005). |
| **References** | 1. Jones, M. et al. (1993) Detection of T and B cells in many animal species using cross-reactive anti-peptide antibodies. J Immunol. 150 (12): 5429-35.<br>2. Shulga-Morskaya, S. et al. (2004) B cell-activating factor belonging to the TNF family acts through separate receptors to support B cell survival and T cell-independent antibody formation. J Immunol. 173 (4): 2331-41.<br>3. Kapturczak, M.H. et al. (2004) Heme oxygenase-1 modulates early inflammatory responses: evidence from the heme oxygenase-1-deficient mouse. Am J Pathol. 165 (3): 1045-53.<br>4. Kothlow, S. et al. (2005) Characterization of duck leucocytes by monoclonal antibodies. Dev Comp Immunol. 29 (8): 733-48.<br>5. Patole, P.S. et al. (2006) Expression and regulation of Toll-like receptors in lupus-like immune complex glomerulonephritis of MRL-Fas(lpr) mice. Nephrol Dial Transplant 21 (11): 3062-73.<br>6. Foryst-Ludwig, A. et al. (2010) PPARgamma activation attenuates T-lymphocyte-dependent inflammation of adipose tissue and development of insulin resistance in obese mice. Cardiovasc Diabetol. 9: 64.<br>7. Osorio, Y. et al. (2011) Identification of small molecule lead compounds for visceral leishmaniasis using a novel ex vivo splenic explant model system. PLoS Negl Trop Dis. 5:e962.<br>8. Flatz, L. et al (2011) T cell-dependence of Lassa fever pathogenesis. PLoS Pathog. 6: e1000836.<br>9. Gendronneau, G. et al. (2010) Influence of Hoxa5 on p53 tumorigenic outcome in mice. Am J Pathol. 176: 995-1005.<br>10. Herrmann, I. et al. (2006) Streptococcus pneumoniae Infection aggravates experimental autoimmune encephalomyelitis via Toll-like receptor 2. Infect Immun. 74: 4841-8.<br>11. Ruf, M.T. et al. (2012) Chemotherapy-Associated Changes of Histopathological Features of Mycobacterium ulcerans Lesions in a Buruli Ulcer Mouse Model. Antimicrob Agents Chemother. 56: 687-96.<br>12. Roy, M. et al. (2012) CXCL1 can be regulated by IL-6 and promotes granulocyte adhesion to |

brain capillaries during bacterial toxin exposure and encephalomyelitis. J Neuroinflammation. 9: 18.

13. Campuzano, O. *et al.* (2012) Arrhythmogenic right ventricular cardiomyopathy: severe structural alterations are associated with inflammation. J Clin Pathol. 65 (12): 1077-83.

14. Lau, Q. *et al.* (2012) Expression and *in vitro* upregulation of MHCII in koala lymphocytes. Vet Immunol Immunopathol. 147: 35-43.

15. Beineke, A. *et al.* (2007) Phenotypical characterization of changes in thymus and spleen associated with lymphoid depletion in free-ranging harbor porpoises (*Phocoena phocoena*). Vet Immunol Immunopathol. 117: 254-65.

16. Pusterla, N. *et al.* (2006) Multicentric T-cell lymphosarcoma in an alpaca. Vet J. 171: 181-5.

17. Fuller, C.L. *et al.* (2003) *In situ* study of abundant expression of proinflammatory chemokines and cytokines in pulmonary granulomas that develop in cynomolgus macaques experimentally infected with *Mycobacterium tuberculosis*. Infect Immun. 71: 7023-34.

18. Singleton, C.L. *et al.* (2007) Diagnosis and treatment of chronic T-lymphocytic leukemia in a spotted hyena (*Crocuta crocuta*). J Zoo Wildl Med. 38: 488-91.

19. Colegrove, K.M. *et al.* (2010) Polyomavirus infection in a free-ranging California sea lion (*Zalophus californianus*) with intestinal T-cell lymphoma. J Vet Diagn Invest. 22: 628-32.

20. Steinberg, J.D. and Keating, J.H. (2008) What is your diagnosis? Cervical mass in a cat. Vet Clin Pathol. 37: 323-7.

21. Osofsky, A. *et al.* (2011) T-cell chronic lymphocytic leukemia in a double yellow-headed Amazon parrot (*Amazona ochrocephala oratrix*). J Avian Med Surg. 25: 286-94.

22. Giannitti, F. *et al.* (2014) Temporal and geographic clustering of polyomavirus-associated olfactory tumors in 10 free-ranging raccoons (*Procyon lotor*). Vet Pathol. 51 (4): 832-45.

23. Malka, S. *et al.* (2008) Disseminated lymphoma of presumptive T-cell origin in a great horned owl (*Bubo virginianus*). J Avian Med Surg. 22: 226-33.

24. Bricker, N.K. *et al.* (2012) Cytochemical and immunocytochemical characterization of blood cells and immunohistochemical analysis of spleen cells from 2 species of frog, *Rana (Aquarana) catesbeiana* and *Xenopus laevis*. Vet Clin Pathol. 41: 353-61.

25. de Winde, C.M. *et al.* (2015) Multispectral imaging reveals the tissue distribution of tetraspanins in human lymphoid organs. Histochem Cell Biol. 144 (2): 133-46.

26. Dewals B.G., *et al.* (2011) Malignant catarrhal fever induced by Alcelaphine herpesvirus 1 is characterized by an expansion of activated CD3+CD8+CD4- T cells expressing a cytotoxic phenotype in both lymphoid and non-lymphoid tissues Vet Res. 42:95

27. Muljono, A. *et al.* (2009) Primary cutaneous lymphoblastic lymphoma in children: series of eight cases with review of the literature. Pathology. 41 (3): 223-8.

28. Sommer, A. *et al.* (2016) Infiltrating T lymphocytes reduce myeloid phagocytosis activity in synucleinopathy model. J Neuroinflammation 13 (1): 174.

29. Velu, V. *et al.* (2016) Induction of Th1-Biased T Follicular Helper (Tfh) Cells in Lymphoid Tissues during Chronic Simian Immunodeficiency Virus Infection Defines Functionally Distinct Germinal Center Tfh Cells. J Immunol. Aug 1. pii: 1600143. [Epub ahead of print]

30. Wen, J. *et al.* (2015) TNF-like weak inducer of apoptosis promotes blood brain barrier disruption and increases neuronal cell death in MRL/lpr mice. J Autoimmun. 60: 40-50.

31. Sample, S.J. *et al.* (2017) Radiographic and magnetic resonance imaging predicts severity of cruciate ligament fiber damage and synovitis in dogs with cranial cruciate ligament rupture. PLoS One. 12 (6): e0178086.

32. Zhang, M.Z. *et al.* (2015) Inhibition of cyclooxygenase-2 in hematopoietic cells results in salt-sensitive hypertension. J Clin Invest. 125 (11): 4281-94.

33. Kallikourdis, M. *et al.* (2017) T cell costimulation blockade blunts pressure overload-induced heart failure. Nat Commun. 8: 14680.

34. 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.

35. Montes-Cobos, E. *et al.* (2017) Targeted delivery of glucocorticoids to macrophages in a mouse model of multiple sclerosis using inorganic-organic hybrid nanoparticles. J Control Release. 245:

157-169.

36. Bartlett SL *et al.* (2010) Intestinal lymphoma of granular lymphocytes in a fisher (*Martes pennanti*) and a Eurasian otter (*Lutra lutra*). J Zoo Wildl Med. 41 (2): 309-15.

37. Houser, K.V. *et al.* (2017) Enhanced inflammation in New Zealand white rabbits when MERS-CoV reinfection occurs in the absence of neutralizing antibody. PLoS Pathog. 13 (8): e1006565.

38. Sparger, E.E. *et al.* (2018) Investigation of immune cell markers in feline oral squamous cell carcinoma. Vet Immunol Immunopathol. 202: 52-62.

39. Palomo, J. *et al.* (2018) The severity of imiquimod-induced mouse skin inflammation is independent of endogenous IL-38 expression. PLoS One. 13 (3): e0194667.

40. Declue, A.E. *et al.* (2018) Identification of immunologic and clinical characteristics that predict inflammatory response to C. Novyi-NT bacteriolytic immunotherapy. BMC Vet Res. 14 (1): 119.

41. 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.

42. Withers, S.S. *et al.* (2018) Multi-color flow cytometry for evaluating age-related changes in memory lymphocyte subsets in dogs. Dev Comp Immunol. 87: 64-74.

43. Basu, A. *et al.* (2019) Association of PD-L1, PD-L2, and Immune Response Markers in Matched Renal Clear Cell Carcinoma Primary and Metastatic Tissue Specimens. Am J Clin Pathol. 151 (2): 217-25.

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| **Further Reading** | 1. Alterio de Goss, M. *et al.* (1998) Control of cytomegalovirus in bone marrow transplantation chimeras lacking the prevailing antigen-presenting molecule in recipient tissues rests primarily on recipient-derived CD8 T cells. J Virol. 72 (10): 7733-44.<br><br>2. Burudi, E.M. *et al.* (2002) Regulation of indoleamine 2,3-dioxygenase expression in simian immunodeficiency virus-infected monkey brains. J Virol. 76 (23): 12233-41.<br><br>3. Piriou-Guzylack, L. (2008) Membrane markers of the immune cells in swine: an update. Vet Res. 39: 54. |
| **Storage** | Store at +4ºC or at -20ºC if preferred.<br><br>This product should be stored undiluted.<br><br>Storage in frost-free freezers is not recommended. This product is photosensitive and should be protected from light.<br><br>Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use. |
| **Guarantee** | 18 months from date of despatch. |
| **Health And Safety Information** | Material Safety Datasheet documentation #10041 available at:<br>10041: https://www.bio-rad-antibodies.com/uploads/MSDS/10041.pdf |
| **Regulatory** | For research purposes only |

# Related Products

## Recommended Negative Controls

RAT IgG1 NEGATIVE CONTROL:FITC (MCA6004F)

## Recommended Useful Reagents

[HUMAN SEROBLOCK (BUF070A)](#)

[HUMAN SEROBLOCK (BUF070B)](#)

| **North & South America** | Tel: +1 800 265 7376<br>Fax: +1 919 878 3751<br>Email: antibody_sales_us@bio-rad.com | **Worldwide** | Tel: +44 (0)1865 852 700<br>Fax: +44 (0)1865 852 739<br>Email: antibody_sales_uk@bio-rad.com | **Europe** | Tel: +49 (0) 89 8090 95 21<br>Fax: +49 (0) 89 8090 95 50<br>Email: antibody_sales_de@bio-rad.com |
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