



## Datasheet: MCA1477PB

**BATCH NUMBER 157006**

<b>Description:</b>	RAT ANTI HUMAN CD3:Pacific Blue®
<b>Specificity:</b>	CD3
<b>Format:</b>	Pacific Blue®
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	CD3-12
<b>Isotype:</b>	IgG1
<b>Quantity:</b>	100 TESTS/1ml

### 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](http://www.bio-rad-antibodies.com/protocols).

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry (1)	▪			1/5 - 1/10

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

#### Target Species

Human

#### 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, African green monkey

Based on sequence similarity, is expected to react with:Mammals, Birds, Amphibia

**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 Pacific Blue - liquid

#### Max Ex/Em

Fluorophore	Excitation Max (nm)	Emission Max (nm)
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<b>Preparation</b>	Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant
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<b>Buffer Solution</b>	Phosphate buffered saline
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<b>Preservative</b>	0.09% Sodium Azide (NaN <sub>3</sub> )
<b>Stabilisers</b>	1% Bovine Serum Albumin

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<b>Approx. Protein Concentrations</b>	IgG concentration 0.05 mg/ml
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<b>Immunogen</b>	Synthetic peptide sequence derived from cytoplasmic epitope of CD3 (Glu-Arg-Pro-Pro-Pro-Val-Pro-Asn-Pro-Asp-Tyr-Glu-Pro-Cys) (ERPPPVPNPDYEP C )
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<b>External Database Links</b>	<b>UniProt:</b> <a href="#">P07766</a> <a href="#">Related reagents</a>  <b>Entrez Gene:</b> <a href="#">916</a> CD3E <a href="#">Related reagents</a>
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<b>Synonyms</b>	T3E
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<b>RRID</b>	AB_10843429
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<b>Specificity</b>	<p><b>Rat anti Human CD3, clone CD3-12</b> 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) (<a href="#">Malissen 2008</a>; <a href="#">Guy and Vignali 2009</a>; <a href="#">Smith-Garvin et al. 2009</a>). CD3 is a defining feature of cells belonging to the T cell lineage and can therefore be used as T cell marker.</p> <p>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. (<a href="#">Jones et al. 1993</a>; <a href="#">Kothlow et al. 2005</a>).</p>
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<b>References</b>	<ol style="list-style-type: none"><li>1. Jones, M. <i>et al.</i> (1993) Detection of T and B cells in many animal species using cross-reactive anti-peptide antibodies. <a href="#">J Immunol. 150 (12): 5429-35.</a></li><li>2. Shulga-Morskaya, S. <i>et al.</i> (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. <a href="#">J Immunol. 173 (4): 2331-41.</a></li><li>3. Kapturczak, M.H. <i>et al.</i> (2004) Heme oxygenase-1 modulates early inflammatory responses: evidence from the heme oxygenase-1-deficient mouse. <a href="#">Am J Pathol. 165 (3): 1045-53.</a></li><li>4. Kothlow, S. <i>et al.</i> (2005) Characterization of duck leucocytes by monoclonal antibodies.</li></ol>
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[Dev Comp Immunol. 29 \(8\): 733-48.](#)

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.](#)
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.](#)
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.](#)
8. Flatz, L. *et al.* (2011) T cell-dependence of Lassa fever pathogenesis. [PLoS Pathog. 6: e1000836.](#)
9. Gendronneau, G. *et al.* (2010) Influence of Hoxa5 on p53 tumorigenic outcome in mice. [Am J Pathol. 176: 995-1005.](#)
10. Herrmann, I. *et al.* (2006) *Streptococcus pneumoniae* Infection aggravates experimental autoimmune encephalomyelitis via Toll-like receptor 2. [Infect Immun. 74: 4841-8.](#)
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.](#)
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. Wiessner, C. *et al.* (2011) The Second-Generation Active A{beta} Immunotherapy CAD106 Reduces Amyloid Accumulation in APP Transgenic Mice While Minimizing Potential Side Effects. [J Neurosci. 31: 9323-31.](#)
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. 197 \(5\): 1832-42.](#)
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.](#)
44. Pellegrini, S. *et al.* (2019) Selective local irradiation improves islet engraftment and survival in intra-bone marrow islet transplantation. [Cytotherapy. 21 \(10\): 1025-32.](#)
45. Ricat, C.M. *et al.* (2020) Immunohistochemical Findings in Idiopathic Inflammatory Bowel Disease in Nine Cats [BioMed Res Int. 2020: 1-6.](#)
46. Gasparitsch, M. *et al.* (2019) Tyrphostin AG490 reduces inflammation and fibrosis in neonatal obstructive nephropathy. [PLoS One. 14 \(12\): e0226675.](#)
47. Datta, M. *et al.* (2020) Microglial Expression of Hdac1 and Hdac2 is Dispensable for Experimental Autoimmune Encephalomyelitis (EAE) Progression [J. 3 \(4\): 358-65.](#)
48. Tigano, M. *et al.* (2021) *In Vivo* Analysis of mtDNA Replication at the Single Molecule Level and with High Resolution. [Methods Mol Biol. 2192: 21-34.](#)
49. Ishida, Y. *et al.* (2020) Prevention of CaCl<sub>2</sub>-induced aortic inflammation and subsequent aneurysm formation by the CCL3-CCR5 axis. [Nat Commun. 11 \(1\): 5994.](#)
50. Cohen, M. *et al.* (2021) Meningeal lymphoid structures are activated under acute and chronic spinal cord pathologies. [Life Sci Alliance. 4 \(1\) Dec 04 \[Epub ahead of print\].](#)
51. Bagnoud, M. *et al.* (2020) c-Jun N-Terminal Kinase as a Therapeutic Target in Experimental Autoimmune Encephalomyelitis. [Cells. 9\(10\): 2154.](#)
52. Choi, S.C. *et al.* (2020) Gut microbiota dysbiosis and altered tryptophan catabolism contribute to autoimmunity in lupus-susceptible mice. [Sci Transl Med. 12 \(551\): eaax2220.](#)
53. Bianchi, A. *et al.* (2021) Moderate Exercise Inhibits Age-Related Inflammation, Liver Steatosis, Senescence, and Tumorigenesis. [J Immunol. ji2001022.](#)
54. Huot, N. *et al.* (2021) SIV-induced terminally differentiated adaptive NK cells in lymph nodes associated with enhanced MHC-E restricted activity. [Nat Commun. 12 \(1\): 1282.](#)
55. Erdmann, N. *et al.* (2010) Evaluation of the soft tissue biocompatibility of MgCa0.8 and surgical steel 316L in vivo: a comparative study in rabbits. [Biomed Eng Online. 9: 63.](#)
56. Khodadoust, M.S. *et al.* (2020) Pembrolizumab in Relapsed and Refractory Mycosis Fungoides and Sézary Syndrome: A Multicenter Phase II Study. [J Clin Oncol. 38 \(1\): 20-8.](#)
57. Thiele, L.S.N. *et al.* (2020) Functional relevance of the multi-drug transporter abcg2 on teriflunomide therapy in an animal model of multiple sclerosis. [J Neuroinflammation. 17 \(1\): 9.](#)
58. Winkler, A. *et al.* (2021) Blood-brain barrier resealing in neuromyelitis optica occurs independently of astrocyte regeneration. [J Clin Invest. 131 \(5\) \[Epub ahead of print\].](#)
59. Sahin, M. *et al.* (2021) The Janus Kinase Inhibitor Ruxolitinib Prevents Terminal Shock in a Mouse Model of Arenavirus Hemorrhagic Fever [Microorganisms. 9 \(3\): 564.](#)
60. Datta, M. & Staszewski, O. (2021) Hdac1 and Hdac2 are essential for physiological maturation of a Cx3cr1 expressing subset of T-lymphocytes. [BMC Res Notes. 14 \(1\): 135.](#)
61. Häusler, D. *et al.* (2021) CNS inflammation after natalizumab therapy for multiple sclerosis: A retrospective histopathological and CSF cohort study. [Brain Pathol. May 6: e12969 \[Epub ahead of print\].](#)

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

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**Storage** Store at +4°C or at -20°C if preferred.

This product should be stored undiluted.

Storage in frost-free freezers is not recommended. This product is photosensitive and should be protected from light.

Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.

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**Guarantee** 12 months from date of despatch

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**Health And Safety Information** Material Safety Datasheet documentation #10041 available at: <https://www.bio-rad-antibodies.com/SDS/MCA1477PB>  
10041

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**Regulatory** For research purposes only

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## Related Products

### Recommended Negative Controls

[RAT IgG1 NEGATIVE CONTROL:Pacific Blue® \(MCA6004PB\)](#)

### Recommended Useful Reagents

[HUMAN SEROBLOCK \(BUF070A\)](#)

[HUMAN SEROBLOCK \(BUF070B\)](#)

**North & South** Tel: +1 800 265 7376

**America** Fax: +1 919 878 3751

Email: [antibody\\_sales\\_us@bio-rad.com](mailto: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](mailto: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](mailto:antibody_sales_de@bio-rad.com)

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