

Datasheet: MCA1477

BATCH NUMBER 155872

Description:	RAT ANTI HUMAN CD3
Specificity:	CD3
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	CD3-12
Isotype:	IgG1
Quantity:	0.2 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)	▪			1/50 - 1/100
Immunohistology - Frozen	▪			1/100
Immunohistology - Paraffin (2)	▪			1/100
ELISA			▪	
Immunoprecipitation			▪	
Western Blotting	▪			
Immunofluorescence	▪			

Where this antibody has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. It is recommended that the user titrates the antibody 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.

(2)This product requires antigen retrieval using heat treatment prior to staining of paraffin sections. Tris/EDTA buffer pH 9.0 is recommended 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, African green monkey
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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 - liquid
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
Carrier Free	Yes
Approx. Protein Concentrations	IgG concentration 1.0 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: P07766 Related reagents Entrez Gene: 916 CD3E Related reagents
Synonyms	T3E
RRID	AB_321245
Specificity	<p>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 ($\epsilon\gamma$, $\epsilon\delta$, $\zeta\zeta$). 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.</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. (Jones et al. 1993; Kothlow et al. 2005).</p>
Histology Positive Control Tissue	Tonsil

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.](#)
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.](#)
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.](#)
4. Kothlow, S. *et al.* (2005) Characterization of duck leucocytes by monoclonal antibodies. [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 CaCl₂-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 \[Epub ahead of print\].](#)

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.](#)

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. 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: <https://www.bio-rad-antibodies.com/SDS/MCA1477>
10040

Regulatory

For research purposes only

Related Products

Recommended Secondary Antibodies

Goat Anti Rat IgG (STAR69...)	FITC
Goat Anti Rat IgG (STAR73...)	RPE
Rabbit Anti Rat IgG (STAR17...)	FITC
Goat Anti Rat IgG (STAR72...)	HRP
Goat Anti Rat IgG (MOUSE ADSORBED) (STAR71...)	DyLight®550 , DyLight®650 , DyLight®800
Rabbit Anti Rat IgG (STAR21...)	HRP
Rabbit Anti Rat IgG (STAR16...)	DyLight®800
Goat Anti Rat IgG (STAR131...)	Alk. Phos. , Biotin

Recommended Negative Controls

[RAT IgG1 NEGATIVE CONTROL \(MCA6004GA\)](#)

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