

Datasheet: MCA1477A647

Description:	RAT ANTI HUMAN CD3:Alexa Fluor®647
Specificity:	CD3
Format:	ALEXA FLUOR® 647
Product Type:	Monoclonal Antibody
Clone:	CD3-12
Isotype:	IgG1
Quantity:	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.

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry (1)	▪			Neat

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
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 Alexa Fluor®647 - liquid

Max Ex/Em

Fluorophore	Excitation Max (nm)	Emission Max (nm)
Alexa Fluor®647	650	665

Preparation

Purified IgG prepared by affinity chromatography on Protein G from tissue culture

supernatant

Buffer Solution Phosphate buffered saline

Preservative 0.09% Sodium Azide (NaN₃)
Stabilisers 1% Bovine Serum Albumin

Approx. Protein Concentrations IgG concentration 0.05mg/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_10841760

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.

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.](#)
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 Research International. 2020: 1-6.](#)

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. 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.

Guarantee

12 months from date of despatch

Acknowledgements

This product is provided under an intellectual property licence from Life Technologies Corporation. The transfer of this product is contingent on the buyer using the purchase product solely in research, excluding contract research or any fee for service research, and the buyer must not sell or otherwise transfer this product or its components for (a) diagnostic, therapeutic or prophylactic purposes; (b) testing, analysis or screening services, or information in return for compensation on a per-test basis; (c) manufacturing or quality assurance or quality control, or (d) resale, whether or not resold for use in research. For information on purchasing a license to this product for purposes other than as described above, contact Life Technologies Corporation, 5791 Van Allen Way, Carlsbad CA 92008 USA or outlicensing@thermofisher.com

Health And Safety Information

Material Safety Datasheet documentation #10041 available at:
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:Alexa Fluor® 647 \(MCA6004A647\)](#)

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

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

'M365356:200529'

Printed on 19 Oct 2020

© 2020 Bio-Rad Laboratories Inc | [Legal](#) | [Imprint](#)