

## Datasheet: MCA834GA

**BATCH NUMBER 159858**

<b>Description:</b>	MOUSE ANTI BOVINE CD4
<b>Specificity:</b>	CD4
<b>Format:</b>	Purified
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	CC30
<b>Isotype:</b>	IgG1
<b>Quantity:</b>	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](http://www.bio-rad-antibodies.com/protocols).

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	▪			1/25 - 1/200
Immunohistology - Frozen	▪			1/100
Immunohistology - Paraffin (1)	▪			
ELISA			▪	
Immunoprecipitation	▪			
Western Blotting			▪	

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 system using appropriate negative/positive controls.

(1)

**Clone CC30 has been reported as being suitable for use on formal dichromate (FD5) fixed paraffin embedded tissue with amplification and antigen retrieval techniques, see [Gutierrez et al.](#) for details.**

<b>Target Species</b>	Bovine
<b>Species Cross Reactivity</b>	<p>Reacts with: Bison</p> <p><b>N.B.</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.</p>

<b>Product Form</b>	Purified IgG - liquid
<b>Preparation</b>	Purified IgG prepared by affinity chromatography on Protein A from tissue culture supernatant
<b>Buffer Solution</b>	Phosphate buffered saline
<b>Preservative Stabilisers</b>	0.09% Sodium Azide (NaN <sub>3</sub> )
<b>Carrier Free</b>	Yes
<b>Approx. Protein Concentrations</b>	IgG concentration 1.0 mg/ml
<b>Immunogen</b>	Bovine thymocytes.
<b>External Database Links</b>	<b>UniProt:</b> <a href="#">A7YY52</a> <a href="#">Related reagents</a>
<b>Fusion Partners</b>	Spleen cells from an immunized mouse were fused with cells of the mouse NS1 myeloma cell line.
<b>Specificity</b>	<p><b>Mouse anti Bovine CD4 antibody, clone CC30</b> recognizes a ~50 kDa transmembrane molecule considered to be the bovine homologue of human CD4. The phenotype, tissue distribution and function of T-cells expressing the bovine CD4 antigen are similar to those in other species. However, expression on macrophages has not yet been detected.</p> <p>Mouse anti Bovine CD4, clone CC30 has successfully been used for immunohistochemical localization of CD4 on paraffin embedded material using zinc salt fixation (<a href="#">Cantón et al. 2013</a>). Additionally, clone CC30 has been reported as being suitable for use on formal dichromate (FD5) fixed paraffin embedded tissue with amplification and antigen retrieval techniques (<a href="#">Gutierrez et al. 1999</a>).</p>
<b>Flow Cytometry</b>	Use 10ul of the suggested working dilution to label 10 <sup>6</sup> cells in 100ul.
<b>References</b>	<ol style="list-style-type: none"> <li>1. Bensaid, A. &amp; Hadam, M. (1991) Individual antigens of cattle. Bovine CD4 (BoCD4). <a href="#">Vet Immunol Immunopathol. 27 (1-3): 51-4.</a></li> <li>2. Eskra, L. et al. (1991) Effect of monoclonal antibodies on <i>in vitro</i>. function of T-cell subsets. <a href="#">Vet Immunol Immunopathol. 27 (1-3): 215-22.</a></li> <li>3. Gutierrez, M. et al. (1999) The detection of CD2+, CD4+, CD8+, and WC1+ T lymphocytes, B cells and macrophages in fixed and paraffin embedded bovine tissue using a range of antigen recovery and signal amplification techniques. <a href="#">Vet Immunol Immunopathol. 71 (3-4): 321-34.</a></li> <li>4. Winkler, M.T. et al. (1999) Bovine herpesvirus 1 can infect CD4(+) T lymphocytes and induce programmed cell death during acute infection of cattle. <a href="#">J Virol. 73 (10): 8657-68.</a></li> <li>5. Winkler, M.T. et al. (2000) Persistence and reactivation of bovine herpesvirus 1 in the tonsils of latently infected calves. <a href="#">J Virol. 74 (11): 5337-46.</a></li> </ol>

6. Riondato, F. *et al.* (2008) Effects of road transportation on lymphocyte subsets in calves [Vet J. 175: 364-8.](#)
7. Collins, R.A. *et al.* (1999) Bovine interleukin-12 and modulation of IFN $\gamma$  production. [Vet Immunol Immunopathol. 68: 193-207.](#)
8. Liebana, E. *et al.* (2007) Distribution and activation of T-lymphocyte subsets in tuberculous bovine lymph-node granulomas. [Vet Pathol. 44: 366-72.](#)
9. Sühwold, A. *et al.* (2010) T cell reactions of *Eimeria bovis* primary and challenge-infected calves. [Parasitol Res. 106: 595-605.](#)
10. Rhodes, S.G. *et al.* (2000) Bovine tuberculosis: immune responses in the peripheral blood and at the site of active disease. [Immunology. 99: 195-202.](#)
11. Machugh, N.D. *et al.* (1997) Identification of two distinct subsets of bovine gamma delta T cells with unique cell surface phenotype and tissue distribution. [Immunology. 92: 340-5.](#)
12. Childerstone, A.J. *et al.* (1999) Demonstration of bovine CD8+ T-cell responses to foot-and-mouth disease virus. [J Gen Virol. 80: 663-9.](#)
13. Rhodes, S.G. *et al.* (2001) Antigen recognition and immunomodulation by gamma delta T cells in bovine tuberculosis. [J Immunol. 166: 5604-10.](#)
14. Knowles, G. *et al.* (1996) Phenotypical characterization of lymphocytes infiltrating regressing papillomas. [J Virol. 70: 8451-8.](#)
15. Smyth, A.J. *et al.* (2001) *In vitro* responsiveness of gammadelta T cells from *Mycobacterium bovis*-infected cattle to mycobacterial antigens: predominant involvement of WC1(+) cells. [Infect Immun. 69: 89-96.](#)
16. Hein, W.R. and Dudler, L. (1997) TCR gamma delta+ cells are prominent in normal bovine skin and express a diverse repertoire of antigen receptors. [Immunology. 91: 58-64.](#)
17. Juleff, N. *et al.* (2009) Foot-and-mouth disease virus can induce a specific and rapid CD4+ T-cell-independent neutralizing and isotype class-switched antibody response in naïve cattle. [J Virol. 83: 3626-36.](#)
18. Hope, J.C. *et al.* (2005) Exposure to *Mycobacterium avium* induces low-level protection from *Mycobacterium bovis* infection but compromises diagnosis of disease in cattle. [Clin Exp Immunol. 141: 432-9.](#)
19. Sopp, P. *et al.* (2006) Flow cytometric detection of gamma interferon can effectively discriminate *Mycobacterium bovis* BCG-vaccinated cattle from *M. bovis*-infected cattle. [Clin Vaccine Immunol. 13: 1343-8.](#)
20. Sacchini, F. *et al.* (2011) A minor role of CD4+ T lymphocytes in the control of a primary infection of cattle with *Mycoplasma mycoides* subsp. *mycoides*. [Vet Res. 42: 77.](#)
21. Skyberg, J.A. *et al.* (2011) Murine and bovine  $\gamma\delta$  T cells enhance innate immunity against *Brucella abortus* infections. [PLoS One. 6\(7\): e21978.](#)
22. Cantón, G.J. *et al.* (2013) Phenotypic characterisation of the cellular immune infiltrate in placentas of cattle following experimental inoculation with *Neospora caninum* in late gestation. [Vet Res. 44: 60.](#)
23. Reid, E. *et al.* (2011) Bovine plasmacytoid dendritic cells are the major source of type I interferon in response to foot-and-mouth disease virus *in vitro* and *in vivo*. [J Virol. 85: 4297-308.](#)
24. Arranz-Solís D *et al.* (2016) Systemic and local immune responses in sheep after *Neospora caninum* experimental infection at early, mid and late gestation. [Vet Res. 47 \(1\): 2.](#)
25. Clapp, B. *et al.* (2011) DNA vaccination of bison to brucellar antigens elicits elevated

antibody and IFN- $\gamma$  responses. [J Wildl Dis. 47 \(3\): 501-10.](#)

26. Aranday-Cortes, E. *et al.* (2013) Upregulation of IL-17A, CXCL9 and CXCL10 in early-stage granulomas induced by *Mycobacterium bovis* in cattle. [Transbound Emerg Dis. 60 \(6\): 525-37.](#)

27. Pirson, C. *et al.* (2015) Highly purified mycobacterial phosphatidylinositol mannosides drive cell-mediated responses and activate NKT cells in cattle. [Clin Vaccine Immunol. 22 \(2\): 178-84.](#)

28. Fuertes, M. *et al.* (2015) Immunohistochemical study and mRNA cytokine profile of the local immune response in cattle naturally infected with *Calicophoron daubneyi*. [Vet Parasitol. 214 \(1-2\): 178-83.](#)

29. Çomaklı, S. & Özdemir, S. (2019) Comparative Evaluation of the Immune Responses in Cattle Mammary Tissues Naturally Infected with Bovine Parainfluenza Virus Type 3 and Bovine Alpha herpesvirus-1. [Pathogens.8 \(1\): 26.](#)

30. Bozkurt, Y.A. *et al.* (2019) The architecture of the lymph nodes in the abdominal and thoracic cavities of wild boar [Ind J Anim Res. 53 609-15.](#)

31. Hecker, Y.P. *et al.* (2015) Cell mediated immune responses in the placenta following challenge of vaccinated pregnant heifers with *Neospora caninum*. [Vet Parasitol. 214 \(3-4\): 247-54.](#)

32. Cunha, P. *et al.* (2019) Expansion, isolation and first characterization of bovine Th17 lymphocytes. [Sci Rep. 9 \(1\): 16115.](#)

33. Sirak, A. *et al.* (2021) Cellular and Cytokine Responses in Lymph Node Granulomas of Bacillus Calmette Guérin (BCG)-Vaccinated and Non-vaccinated Cross-Breed Calves Naturally Infected With *Mycobacterium bovis*. [Front Vet Sci. 8: 698800.](#)

34. Korbonits, L. *et al.* (2022) Mycobacterium avium subsp. paratuberculosis Infected Cows Reveal Divergent Immune Response in Bovine Peripheral Blood Derived Lymphocyte Proteome. [Metabolites. 12 \(10\): 924.](#)

35. Andrés, S. *et al.* (2024) Essential oil supplementation in milk replacers: short- and long-term impacts on feed efficiency, the faecal microbiota and the plasma metabolome in dairy calves. [J Dev Orig Health Dis. : 1-11.](#)

<b>Storage</b>	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.
<b>Guarantee</b>	12 months from date of despatch
<b>Health And Safety Information</b>	Material Safety Datasheet documentation #10040 available at: <a href="https://www.bio-rad-antibodies.com/SDS/MCA834GA">https://www.bio-rad-antibodies.com/SDS/MCA834GA</a> 10040
<b>Regulatory</b>	For research purposes only

## Related Products

### Recommended Secondary Antibodies

Rabbit Anti Mouse IgG (STAR12...) [RPE](#)  
Goat Anti Mouse IgG IgA IgM (STAR87...) [HRP](#)  
Goat Anti Mouse IgG (STAR76...) [RPE](#)  
Goat Anti Mouse IgG (STAR70...) [FITC](#)  
Goat Anti Mouse IgG (H/L) (STAR117...) [Alk. Phos.](#), [DyLight®488](#), [DyLight®550](#),  
[DyLight®650](#), [DyLight®680](#), [DyLight®800](#),  
[FITC](#), [HRP](#)  
Goat Anti Mouse IgG (STAR77...) [HRP](#)  
Goat Anti Mouse IgG (Fc) (STAR120...) [FITC](#), [HRP](#)  
Rabbit Anti Mouse IgG (STAR13...) [HRP](#)  
Rabbit Anti Mouse IgG (STAR9...) [FITC](#)

## Recommended Negative Controls

[MOUSE IgG1 NEGATIVE CONTROL \(MCA928\)](#)

<b>North &amp; South America</b>	Tel: +1 800 265 7376 Fax: +1 919 878 3751 Email: <a href="mailto:antibody_sales_us@bio-rad.com">antibody_sales_us@bio-rad.com</a>	<b>Worldwide</b>	Tel: +44 (0)1865 852 700 Fax: +44 (0)1865 852 739 Email: <a href="mailto:antibody_sales_uk@bio-rad.com">antibody_sales_uk@bio-rad.com</a>	<b>Europe</b>	Tel: +49 (0) 89 8090 95 21 Fax: +49 (0) 89 8090 95 50 Email: <a href="mailto:antibody_sales_de@bio-rad.com">antibody_sales_de@bio-rad.com</a>
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