# Datasheet: MCA1653A647

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| **Description:** | MOUSE ANTI BOVINE CD4:Alexa Fluor® 647 |
| **Specificity:** | CD4 |
| **Format:** | ALEXA FLUOR® 647 |
| **Product Type:** | Monoclonal Antibody |
| **Clone:** | CC8 |
| **Isotype:** | IgG2a |
| **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 | ▪ | | | Neat - 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 system using appropriate negative/positive controls.

**Target Species**

Bovine

**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 A from tissue culture supernatant

**Buffer Solution**

Phosphate buffered saline

**Preservative Stabilisers**

0.09% Sodium Azide
1% Bovine Serum Albumin

**Approx. Protein Concentrations**

IgG concentration 0.05 mg/ml

**Immunogen**

Bovine lymphocytes.

**External Database Links**

**UniProt:**
A7YY52 Related reagents

**Fusion Partners**

Spleen cells from an immunized mouse were fused with cells of the mouse NS1 myeloma cell line.

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|---|---|
| **Specificity** | **Mouse anti Bovine CD4 antibody, clone CC8** recognizes bovine CD4, the homolog of human CD4 and immunoprecipitates a ~50 kDa molecule. 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. Clone CC8 has been reported as being suitable for use on formalin dichromate (FD5) fixed paraffin embedded tissue with amplification and antigen retrieval techniques (Eskra *et al.* 1991). |
| **Flow Cytometry** | Use 10ul of the suggested working dilution to label $10^6$ cells in 100ul. |

**References**


1. Bensaid, A. & Hadam, M. (1991) Individual antigens of cattle. Bovine CD4 (BoCD4). Vet Immunol Immunopathol. 27 (1-3): 51-4.
2. Eskra, L. *et al.* (1991) Effect of monoclonal antibodies on *in vitro* function of T-cell subsets. Vet Immunol Immunopathol. 27 (1-3): 215-22.
3. Howard, C.J. *et al.* (1991) Summary of workshop findings for leukocyte antigens of cattle. Vet Immunol Immunopathol. 27 (1-3): 21-7.
4. 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. Vet Immunol Immunopathol. 71 (3-4): 321-34.
5. Sidders, B. *et al.* (2008) Screening of highly expressed mycobacterial genes identifies Rv3615c as a useful differential diagnostic antigen for the *Mycobacterium tuberculosis* complex. Infect Immun. 76: 3932-9.
6. Brackenbury, L.S. *et al.* (2005) Identification of a cell population that produces alpha/beta interferon *in vitro* and *in vivo* in response to noncytopathic bovine viral diarrhea virus. J Virol. 79: 7738-44.
7. Buddle, B.M. *et al.* (2003) Revaccination of neonatal calves with *Mycobacterium bovis* BCG reduces the level of protection against bovine tuberculosis induced by a single vaccination. Infect Immun. 71: 6411-9.
8. Gerner, W. *et al.* (2009) Identification of major histocompatibility complex restriction and anchor residues of foot-and-mouth disease virus-derived bovine T-cell epitopes. J Virol. 83: 4039-50.
9. Harris, J. *et al.* (2002) Expression of caveolin by bovine lymphocytes and antigen-presenting cells Immunology. 105: 190-5.
10. Lynch, E.M. *et al.* (2010) Effect of abrupt weaning at housing on leukocyte distribution, functional activity of neutrophils, and acute phase protein response of beef calves. BMC Vet Res. 6: 39.
11. Hu, X.D. *et al.* (2009) Immunotherapy with combined DNA vaccines is an effective treatment for *M. bovis* infection in cattle Vaccine. 27: 1317-22.
12. Coad, M. *et al.* (2010) Repeat tuberculin skin testing leads to desensitisation in naturally infected tuberculous cattle which is associated with elevated interleukin-10 and decreased interleukin-1 beta responses. Vet Res. 41: 14.
13. Whelan, A.O. *et al.* (2011) Development of an Antibody to Bovine IL-2 Reveals Multifunctional CD4 T(EM) Cells in Cattle Naturally Infected with Bovine Tuberculosis. PLoS One. 6: e29194.
14. Wernike, K. *et al.* (2013) Oral exposure, reinfection and cellular immunity to Schmallenberg virus in cattle. Vet Microbiol. pii: S0378-1135(13)00092-8.
15. Kiku, Y. *et al.* (2010) Decrease in bovine CD14 positive cells in colostrum is associated with the incidence of mastitis after calving. Vet Res Commun. 34: 197-203.
16. Dacal,. V. *et al.* (2013) Immunohistochemical characterization of inflammatory cells in the skin of cattle undergoing repeated infestations with *Hypoderma lineatum* (Diptera: Oestridae) larvae. J Comp Pathol. 145: 282-8.
17. Oh, Y. *et al.* (2012) Interferon-γ induced by *in vitro* re-stimulation of CD4+ T-cells correlates with *in vivo* FMD vaccine induced protection of cattle against disease and persistent infection. PLoS One. 7: e44365.
18. Hine, B.C. *et al.* (2012) Analysis of leukocyte populations in Canadian Holsteins classified as

high or low immune responders for antibody- or cell-mediated immune response. Can J Vet Res. 76: 149-56.
19. Aranday-Cortes, E. *et al.* (2012) Transcriptional profiling of disease-induced host responses in bovine tuberculosis and the identification of potential diagnostic biomarkers. PLoS One. 7: e30626.
20. Tenaya, I.W. *et al.* (2012) Flow cytometric analysis of lymphocyte subset kinetics in Bali cattle experimentally infected with Jembrana disease virus. Vet Immunol Immunopathol. 149: 167-76.
21. Blunt, L. *et al.* (2015) Phenotypic characterization of bovine memory cells responding to mycobacteria in IFN&gama; enzyme linked immunospot assays. Vaccine. 33 (51): 7276-82.
22. Grit, G.H. *et al.* (2014) Evaluation of cellular and humoral systemic immune response against *Giardia duodenalis* infection in cattle. Vet Parasitol. 202 (3-4): 145-55.
23. Brodzki, P. *et al.* (2014) Phenotyping of leukocytes and granulocyte and monocyte phagocytic activity in the peripheral blood and uterus of cows with endometritis. Theriogenology. 82 (3): 403-10.
24. Metcalfe, H.J. *et al.* (2016) Protection associated with a TB vaccine is linked to increased frequency of Ag85A-specific CD4(+) T cells but no increase in avidity for Ag85A. Vaccine. 34 (38): 4520-5.
25. Sun, F. *et al.* (2016) Regulation of Nutritional Metabolism in Transition Dairy Cows: Energy Homeostasis and Health in Response to Post-Ruminal Choline and Methionine. PLoS One. 11 (8): e0160659.
26. Diaz-San Segundo, F. *et al.* (2016) Combination of Adt-O1Manisa and Ad5-boIFNλ3 induces early protective immunity against foot-and-mouth disease in cattle. Virology. 499: 340-9.
27. Okagawa, T. *et al.* (2016) Cooperation of PD-1 and LAG-3 Contributes to T-Cell Exhaustion in *Anaplasma marginale*-Infected Cattle. Infect Immun. 84 (10): 2779-90.
28. Kruger, E.F. *et al.* (2003) Bovine monocytes induce immunoglobulin production in peripheral blood B lymphocytes. Dev Comp Immunol. 27 (10): 889-97.
29. Wattegedera, S.R. *et al.* (2017) Enhancing the toolbox to study IL-17A in cattle and sheep. Vet Res. 48 (1): 20.
30. Herry, V. *et al.* (2017) Local immunization impacts the response of dairy cows to *Escherichia* coli mastitis. Sci Rep. 7 (1): 3441.
31. Novak, B. *et al.* (2018) Bovine Peripheral Blood Mononuclear Cells Are More Sensitive to Deoxynivalenol Than Those Derived from Poultry and Swine. Toxins (Basel). 10 (4)Apr 11 [Epub ahead of print].

**Storage**

Store at +4$^{o}$C or at -20$^{o}$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.

**Shelf Life**

18 months from date of despatch.

**Acknowledgements**

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| **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

MOUSE IgG2a NEGATIVE CONTROL:Alexa Fluor® 647 (MCA929A647)


**North & South America** Tel: +1 800 265 7376 Fax: +1 919 878 3751 Email: antibody_sales_us@bio-rad.com

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