

Datasheet: MCA1424GA

BATCH NUMBER 165558

Description:	MOUSE ANTI BOVINE CD21
Specificity:	CD21
Other names:	CR2
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	CC21
Isotype:	IgG1
Quantity:	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.

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

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.

Target Species	Bovine
Species Cross Reactivity	<p>Reacts with: Goat, Sheep, Red deer, Mule deer</p> <p>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.</p>
Product Form	Purified IgG - liquid

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 (NaN ₃)
Carrier Free	Yes
Approx. Protein Concentrations	IgG concentration 1 mg/ml
RRID	AB_11152606
Fusion Partners	Spleen cells from immunized BALB/c mice were fused with cells of the mouse NSI myeloma cell line.
Specificity	<p>Mouse anti Bovine CD21 monoclonal antibody, clone CC21 recognizes the bovine CD21 cell surface antigen, a ~145 kDa single pass type I membrane glycoprotein containing multiple sushi domains. CD21 is also known as complement receptor type 2. In cattle CD21 expression is restricted to B lymphocytes (Naessens et al. 1990). CD21 may be expressed on B cells as either a long or a short form (Pringle et al. 2012)</p> <p>Mouse anti bovine CD21, clone CC21 has been used to demonstrate the co-expression of CD21 with PrP^c on B cells of scrapie infected sheep (Halliday et al. 2005).</p>
Flow Cytometry	Use 10µl of the suggested working dilution to label 10 ⁶ cells in 100µl
References	<ol style="list-style-type: none"> 1. Naessens, J. <i>et al.</i> (1990) Characterization of a bovine leucocyte differentiation antigen of 145,000 Mw restricted to B lymphocytes. Immunology 69: 525-30. 2. Howard, C.J. <i>et al.</i> (1991) Summary of workshop findings for leukocyte antigens of cattle. Vet Immunol Immunopathol. 27 (1-3): 21-7. 3. Sopp, P. & Howard, C.J. (2001) IFN gamma and IL-4 production by CD4, CD8 and WC1 gamma delta TCR(+) T cells from cattle lymph nodes and blood. Vet Immunol Immunopathol. 81 (1-2): 85-96. 4. Sigurdson, C.J. <i>et al.</i> (2002) PrP(CWD) lymphoid cell targets in early and advanced chronic wasting disease of mule deer. J Gen Virol. 83: 2617-28. 5. Kruger, E.F. <i>et al.</i> (2003) Bovine monocytes induce immunoglobulin production in peripheral blood B lymphocytes. Dev Comp Immunol. 27 (10): 889-97. 6. Newland, A. <i>et al.</i> (2004) Ovine dendritic cells transduced with an adenoviral CTLA4eEGFP fusion protein construct induce hyporesponsiveness to allostimulation. Immunology. 113: 310-7. 7. Halliday, S. <i>et al.</i> (2005) Expression of PrPC on cellular components of sheep blood. J Gen Virol. 86 (Pt 5): 1571-9. 8. Brackenbury, L.S. <i>et al.</i> (2005) Identification of a cell population that produces alpha/beta interferon <i>in vitro</i> and <i>in vivo</i> in response to noncytopathic bovine viral diarrhea virus. J Virol. 79: 7738-44.

9. Weiss, D.J. *et al.* (2006) Mucosal immune response in cattle with subclinical Johne's disease. [Vet Pathol. 43: 127-35.](#)
10. Richt, J.A. *et al.* (2007) Production of cattle lacking prion protein. [Nat Biotechnol. 25: 132-8.](#)
11. Lwin, S. *et al.* (2009) Immune cell types involved in early uptake and transport of recombinant mouse prion protein in Peyer's patches of calves. [Cell Tissue Res. 338: 343-54.](#)
12. Ekman, A. *et al.* (2010) B-cell development in bovine fetuses proceeds via a pre-B like cell in bone marrow and lymph nodes. [Dev Comp Immunol. 34 \(8\): 896-903.](#)
13. Edwards, J.C. *et al.* (2010) PrP(Sc) is associated with B cells in the blood of scrapie-infected sheep. [Virology. 405: 110-9.](#)
14. 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.](#)
15. Chattha, K.S. *et al.* (2010) Immunohistochemical investigation of cells expressing CD21, membrane IgM, CD32 and a follicular dendritic cell marker in the lymphoid tissues of neonatal calves. [Vet Immunol Immunopathol. 137: 284-90.](#)
16. Brujeni, G.N. *et al.* (2010) Bovine immunodeficiency virus and bovine leukemia virus and their mixed infection in Iranian Holstein cattle. [J Infect Dev Ctries. 4 \(9\): 576-9.](#)
17. Booth, J.S. *et al.* (2010) Co-stimulation with TLR7/8 and TLR9 agonists induce down-regulation of innate immune responses in sheep blood mononuclear and B cells. [Dev Comp Immunol. 34 \(5\): 572-8.](#)
18. Breugelmans, S. *et al.* (2011) Differences between the ovine tonsils based on an immunohistochemical quantification of the lymphocyte subpopulations. [Comp Immunol Microbiol Infect Dis. 34: 217-25.](#)
19. Breugelmans, S. *et al.* (2011) Immunoassay of lymphocyte subsets in ovine palatine tonsils. [Acta Histochem. 113: 416-22.](#)
20. Summers, C. *et al.* (2012) The distribution of immune cells in the lungs of classical and atypical ovine pulmonary adenocarcinoma. [Vet Immunol Immunopathol. 146: 1-7.](#)
21. Dagleish, M.P. *et al.* (2012) Immunophenotype of cells within cervine rectoanal mucosa-associated lymphoid tissue and mesenteric lymph nodes. [J Comp Pathol. 146: 365-71.](#)
22. Pilla, R. *et al.* (2012) Long-term study of MRSA ST1, t127 mastitis in a dairy cow. [Vet Rec. 170: 312.](#)
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: 403-10.](#)
24. Meganck, V. *et al.* (2014) Development of a method for isolating bovine colostrum mononuclear leukocytes for phenotyping and functional studies. [Vet J. 200: 294-8.](#)
25. Silva, A.P. *et al.* (2015) Encapsulated *Brucella ovis* Lacking a Putative ATP-Binding Cassette Transporter (Δ abcBA) Protects against Wild Type *Brucella ovis* in Rams. [PLoS One. 10 \(8\): e0136865.](#)
26. Nikbakht Brujeni, G. *et al.* (2016) Association of BoLA-DRB3.2 Alleles with BLV Infection Profiles (Persistent Lymphocytosis/Lymphosarcoma) and Lymphocyte Subsets in Iranian Holstein Cattle. [Biochem Genet. 54 \(2\): 194-207.](#)
27. De Matteis G *et al.* (2016) Evaluation of leptin receptor expression on buffalo leukocytes. [Vet Immunol Immunopathol. 177: 16-23.](#)
28. Ramos, A. *et al.* (2018) Melatonin enhances responsiveness to *Dichelobacter nodosus*

- vaccine in sheep and increases peripheral blood CD4 T lymphocytes and IgG-expressing B lymphocytes. [Vet Immunol Immunopathol. 206: 1-8.](#)
29. Jimbo, S. *et al.* (2019) Natural and inducible regulatory B cells are widely distributed in ovine lymphoid tissues. [Vet Immunol Immunopathol. 211: 44-8.](#)
30. Brodzki, P. *et al.* (2020) Selected leukocyte subpopulations in peripheral blood and uterine washings in cows before and after intrauterine administration of cefapirin and methisoprinol. [Anim Sci J. 91 \(1\): e13306.](#)
31. Radley, G. *et al.* (2020) *In Vitro*. Benchmarking Study of Ventricular Assist Devices in Current Clinical Use. [J Card Fail. 26 \(1\): 70-79.](#)
32. Okino, C.H. *et al.* (2020) A polymorphic CD4 epitope related to increased susceptibility to *Babesia bovis*. in Canchim calves. [Vet Immunol Immunopathol. 230: 110132.](#)
33. Khosa, S. *et al.* (2020) Bovine Adenovirus-3 Tropism for Bovine Leukocyte Sub-Populations. [Viruses. 12 \(12\): 1431.](#)
34. Gondaira, S. *et al.* (2020) Immunosuppression in Cows following Intramammary Infusion of *Mycoplasma bovis*. [Infect Immun. 88 \(3\): e00521-19.](#)
35. Souza, F.N. *et al.* (2020) Lymphocyte proliferative responses in dairy cows supplemented with an immunomodulatory feed additive and administered polyvalent vaccination. [Arquivo Brasileiro de Medicina Veterinária e Zootecnia. 72 \(6\): 2397-401.](#)
36. Ramm, R. *et al.* (2020) Decellularization combined with enzymatic removal of N-linked glycans and residual DNA reduces inflammatory response and improves performance of porcine xenogeneic pulmonary heart valves in an ovine *in vivo* model. [Xenotransplantation. 27 \(2\): e12571.](#)
37. Park, D.S. *et al.* (2021) Dynamic changes in blood immune cell composition and function in Holstein and Jersey steers in response to heat stress. [Cell Stress Chaperones. 26 \(4\): 705-20.](#)
38. Colombatti Olivieri, M.A. *et al.* (2021) Evaluation of a virulent strain of *Mycobacterium avium* subsp. *paratuberculosis* used as a heat-killed vaccine. [Vaccine. 39 \(51\): 7401-7412.](#)
39. Casaro, S. *et al.* (2022) Flow cytometry panels for immunophenotyping dairy cattle peripheral blood leukocytes [Vet Immunol Immunopathol. 248: 110417.](#)
40. Okino, C.H. *et al.* (2022) CD4 bovine gene: Differential polymorphisms among cattle breeds and a new tool for rapid identification. [Vet Immunol Immunopathol. 251: 110462.](#)

Storage	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.
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/MCA1424GA 10040
Regulatory	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
Rabbit Anti Mouse IgG (STAR9...)	FITC
Goat Anti Mouse IgG (STAR77...)	HRP
Goat Anti Mouse IgG (Fc) (STAR120...)	FITC , HRP
Rabbit Anti Mouse IgG (STAR13...)	HRP

Recommended Negative Controls

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

North & South America	Tel: +1 800 265 7376 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
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'M409592:221020'

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