

## Datasheet: MCA2110

<b>Description:</b>	MOUSE ANTI BOVINE INTERLEUKIN-10
<b>Specificity:</b>	IL-10
<b>Format:</b>	Purified
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	CC318
<b>Isotype:</b>	IgG2b
<b>Quantity:</b>	0.5 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)	▪			
Immunohistology - Frozen			▪	
Immunohistology - Paraffin			▪	
ELISA	▪			5ug/ml - 10ug/ml
Immunoprecipitation			▪	
Western Blotting			▪	
ELISpot	▪			

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. The use of Leucoperm (Product Code [BUF09](#)) is recommended for this purpose.**

<b>Target Species</b>	Bovine
<b>Species Cross Reactivity</b>	<p>Reacts with: Horse, Sheep</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

---

**Buffer Solution** Phosphate buffered saline

---

**Preservative Stabilisers** 0.09% sodium azide (NaN<sub>3</sub>)

---

**Carrier Free** Yes

---

**Approx. Protein Concentrations** IgG concentration 1.0 mg/ml

---

**Immunogen** Plasmid cDNA encoding bovine IL-10.

---

**External Database Links**

**UniProt:**

[P43480](#)

[Related reagents](#)

**Entrez Gene:**

[281246](#)

IL10

[Related reagents](#)

---

**RRID** AB\_2249021

---

**Fusion Partners** Spleen cells from immunized Balb/c mice were fused with cells of the mouse SP2/0 myeloma cell line

---

**Specificity** **Mouse anti Bovine interleukin-10 antibody, clone CC318** recognizes bovine IL-10. Mouse anti Bovine interleukin-10 antibody, clone CC318 has been shown not to inhibit the biological activity of IL-10.

---

**ELISA** Mouse anti Bovine interleukin-10 antibody, clone CC318 may be used as a capture antibody in a sandwich ELISA assay for bovine IL-10 in combination with [MCA2111B](#) as detection reagent ([Bannermann et al. 2004](#)).

---

**References**

1. Kwong, L.S. *et al.* (2002) Development of an ELISA for bovine IL-10. [Vet Immunol Immunopathol. 85 \(3-4\): 213-23.](#)
2. Bannerman, D.D. *et al.* (2004) *Escherichia coli* and *Staphylococcus aureus* elicit differential innate immune responses following intramammary infection. [Clin Diagn Lab Immunol. 11: 463-72.](#)
3. Abbott, J.R. *et al.* (2005) Rapid and long-term disappearance of CD4+ T lymphocyte responses specific for *Anaplasma marginale* major surface protein-2 (MSP2) in MSP2 vaccinates following challenge with live *A. marginale*. [J Immunol. 174: 6702-15.](#)
4. Berger, S.T. and Griffin, F.T. (2006) A comparison of ovine monocyte-derived macrophage function following infection with *Mycobacterium avium* ssp. *avium* and *Mycobacterium avium* ssp. *paratuberculosis*. [Immunol Cell Biol. 84: 349-56.](#)
5. Davis, T.L. and Pate, J.L. (2007) Bovine luteal cells stimulate proliferation of major histocompatibility nonrestricted gamma delta T cells. [Biol Reprod. 77: 914-22.](#)
6. Denis, M. *et al.* (2007) Enhancement of the sensitivity of the whole-blood gamma interferon assay for diagnosis of *Mycobacterium bovis* infections in cattle. [Clin Vaccine](#)

[Immunol. 14 \(11\): 1483-9.](#)

7. Hamza, E. *et al.* (2007) Modulation of allergy incidence in icelandic horses is associated with a change in IL-4-producing T cells. [Int Arch Allergy Immunol. 144: 325-37.](#)
8. Souza, M. *et al.* (2008) Pathogenesis and immune responses in gnotobiotic calves after infection with the genogroup II.4-HS66 strain of human norovirus. [J Virol. 82: 1777-86.](#)
9. Flynn, R.J. *et al.* (2008) Possible role for Toll-like receptors in interaction of *Fasciola hepatica* excretory/secretory products with bovine macrophages. [Infect Immun. 76: 678-84.](#)
10. Weiss DJ *et al.* (2008) Bovine monocyte TLR2 receptors differentially regulate the intracellular fate of *Mycobacterium avium* subsp. *paratuberculosis* and *Mycobacterium avium* subsp. *avium*. [J Leukoc Biol. 83 \(1\): 48-55.](#)
11. Scandurra, G.M. *et al.* (2009) Assessment of live candidate vaccines for paratuberculosis in animal models and macrophages. [Infect Immun. 78: 1383-9.](#)
12. Olivier, M. *et al.* (2009) Capacities of migrating CD1b+ lymph dendritic cells to present Salmonella antigens to naive T cells. [PLoS One. 7: e30430.](#)
13. Jones, G.J. *et al.* (2010) Simultaneous measurement of antigen-stimulated interleukin-1 beta and gamma interferon production enhances test sensitivity for the detection of *Mycobacterium bovis* infection in cattle. [Clin Vaccine Immunol. 17: 1946-51.](#)
14. 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.](#)
15. Ferret-Bernard, S. *et al.* (2010) Cellular and molecular mechanisms underlying the strong neonatal IL-12 response of lamb mesenteric lymph node cells to R-848. [PLoS One. 5: e13705.](#)
16. Parker, D.G. *et al.* (2010) Lentivirus-mediated gene transfer of interleukin 10 to the ovine and human cornea. [Clin Experiment Ophthalmol. 38: 405-13.](#)
17. Rinaldi, M. *et al.* (2010) A sentinel function for teat tissues in dairy cows: dominant innate immune response elements define early response to *E. coli* mastitis. [Funct Integr Genomics. 10: 21-38.](#)
18. Wenz, J.R. *et al.* (2010) Factors associated with concentrations of select cytokine and acute phase proteins in dairy cows with naturally occurring clinical mastitis. [J Dairy Sci. 93: 2458-70.](#)
19. den Hartog, G. *et al.* (2011) Modulation of human immune responses by bovine interleukin-10. [PLoSone 6: e18188](#)
20. Shu, D. *et al.* (2011) Diverse cytokine profile from mesenteric lymph node cells of cull cows severely affected with Johne's disease. [Clin Vaccine Immunol. 18: 1467-76.](#)
21. Ferret-Bernard, S. *et al.* (2011) Mesenteric lymph node cells from neonates present a prominent IL-12 response to CpG oligodeoxynucleotide via an IL-15 feedback loop of amplification. [Vet Res. 42:19.](#)
22. Ikebuchi, R. *et al.* (2013) Blockade of bovine PD-1 increases T cell function and inhibits bovine leukemia virus expression in B cells *in vitro*. [Vet Res. 44: 59.](#)
23. McGill, J.L. *et al.* (2013) Differential chemokine and cytokine production by neonatal bovine  $\gamma/\delta$  T-cell subsets in response to viral toll-like receptor agonists and *in vivo* respiratory syncytial virus infection. [Immunology. 139: 227-44.](#)
24. Redondo, E. *et al.* (2014) Induction of interleukin-8 and interleukin-12 in neonatal ovine lung following experimental inoculation of bovine respiratory syncytial virus. [J Comp Pathol. 150 \(4\): 434-48.](#)

25. Dooley LM *et al.* (2015) Effect of mesenchymal precursor cells on the systemic inflammatory response and endothelial dysfunction in an ovine model of collagen-induced arthritis. [PLoS One. 10 \(5\): e0124144.](#)
26. Rainard, P. *et al.* (2016) Innate and Adaptive Immunity Synergize to Trigger Inflammation in the Mammary Gland. [PLoS One. 11 \(4\): e0154172.](#)
27. Pomeroy B *et al.* (2016) Impact of *in vitro* treatments of physiological levels of estradiol and progesterone observed in pregnancy on bovine monocyte-derived dendritic cell differentiation and maturation. [Vet Immunol Immunopathol. 182: 37-42.](#)
28. Rodrigues, V. *et al.* (2017) Development of a bead-based multiplexed assay for simultaneous quantification of five bovine cytokines by flow cytometry. [Cytometry A. 91 \(9\): 901-7.](#)
29. Westover, A. *et al.* (2017) Effect of Human Amnion Epithelial Cells on the Acute Inflammatory Response in Fetal Sheep. [Front Physiol. 8: 871.](#)
30. Canal AM *et al.* (2017) Immunohistochemical detection of pro-inflammatory and anti-inflammatory cytokines in granulomas in cattle with natural *Mycobacterium bovis* infection. [Res Vet Sci. 110: 34-39.](#)
31. Cassidy-Cain, R.L. *et al.* (2017) Inhibition of Antigen-Specific and Nonspecific Stimulation of Bovine T and B Cells by Lymphostatin from Attaching and Effacing *Escherichia coli*. [Infect Immun. 85 \(2\): e00845-16.](#)
32. Jimbo, S. *et al.* (2019) Natural and inducible regulatory B cells are widely distributed in ovine lymphoid tissues. [Vet Immunol Immunopathol. 211: 44-8.](#)
33. Stabel, J.R. & Bannantine, J.P. (2019) Divergent Antigen-Specific Cellular Immune Responses during Asymptomatic Subclinical and Clinical States of Disease in Cows Naturally Infected with *Mycobacterium avium* subsp. *paratuberculosis*. [Infect Immun. 88\(1\):e00650-19.](#)
34. Ciliberti, M.G. *et al.* (2020) Nexus Between Immune Responses and Oxidative Stress: The Role of Dietary Hydrolyzed Lignin in *ex vivo* Bovine Peripheral Blood Mononuclear Cell Response. [Front Vet Sci. 7: 9.](#)
35. Stabel, J.R. *et al.* (2021) Comparative cellular immune responses in calves after infection with *Mycobacterium avium* subsp. *paratuberculosis*, *M. avium* subsp. *avium*, *M. kansasii*, and *M. bovis*. [Vet Immunol Immunopathol. 237: 110268.](#)
36. Davidson, J.O. *et al.* (2021) Window of opportunity for human amnion epithelial stem cells to attenuate astrogliosis after umbilical cord occlusion in preterm fetal sheep. [Stem Cells Transl Med. 10 \(3\): 427-40.](#)
37. Ciliberti, M.G. *et al.* (2022) Green extraction of bioactive compounds from wine lees and their bio-responses on immune modulation using *in vitro* sheep model. [J Dairy Sci. 105 \(5\): 4335-53.](#)
38. Santillo, A. *et al.* (2022) Feeding tannins to dairy cows in different seasons improves the oxidative status of blood plasma and the antioxidant capacity of cheese. [J Dairy Sci. 105 \(11\): 8609-20.](#)
39. Bouroutzika, E. *et al.* (2023) Melatonin Administration to Pregnant Ewes for Coccidiosis Control in Their Offspring. [Animals \(Basel\). 13 \(14\): 2381.](#)
40. de Silva, K. *et al.* (2018) Defining resilience to mycobacterial disease: Characteristics of survivors of ovine paratuberculosis. [Vet Immunol Immunopathol. 195: 56-64.](#)
41. Stabel, J.R. *et al.* (2020) Comparison of Sheep, Goats, and Calves as Infection Models for *Mycobacterium avium* subsp. *paratuberculosis*. [Vet Immunol Immunopathol. 225: 110060.](#)

42. Galinsky, R. *et al.* (2020) Tumor necrosis factor inhibition attenuates white matter gliosis after systemic inflammation in preterm fetal sheep. [J Neuroinflammation. 17 \(1\): 92.](#)
43. Ciliberti, M.G. *et al.* (2024) Role of hazelnut skin supplementation on plasma antioxidant status and cytokine profile in growing lambs. [Front Vet Sci. 11: 1340141.](#)

**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/MCA2110>  
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 IgG2b NEGATIVE CONTROL \(MCA691\)](#)

<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>
----------------------------------	---	------------------	---	---------------	---

To find a batch/lot specific datasheet for this product, please use our online search tool at: [bio-rad-antibodies.com/datasheets](https://bio-rad-antibodies.com/datasheets)  
'M412887:221117'

Printed on 04 Mar 2024