

## Datasheet: MCA1783B

**BATCH NUMBER 150896A**

<b>Description:</b>	MOUSE ANTI BOVINE INTERFERON GAMMA:Biotin
<b>Specificity:</b>	IFN GAMMA
<b>Other names:</b>	INTERFERON GAMMA
<b>Format:</b>	Biotin
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	CC302
<b>Isotype:</b>	IgG1
<b>Quantity:</b>	0.25 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
Immunohistology - Frozen			▪	
Immunohistology - Paraffin			▪	
ELISA	▪			5ug/ml
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. It is recommended that the user titrates the antibody for use in their own system using appropriate negative/positive controls.

### Target Species

Bovine

### Species Cross Reactivity

Reacts with: Human, Pig, Dog, Horse, Sheep, Goat, Dolphin, Ferret, Mink, Fin Whale, Rabbit

Based on sequence similarity, is expected to react with: Mustelid

**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 Biotin - liquid

### Preparation

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

supernatant

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**Buffer Solution** Phosphate buffered saline

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**Preservative Stabilisers** 0.09% Sodium Azide

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**Approx. Protein Concentrations** IgG concentration 0.5 mg/ml

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**External Database Links**

**UniProt:**  
[P07353](#)   [Related reagents](#)

**Entrez Gene:**  
[281237](#) IFNG   [Related reagents](#)

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**RRID** AB\_324374

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

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**Specificity** **Mouse anti Bovine IFN $\gamma$  antibody, clone CC302**, recognizes bovine interferon-gamma, a 143 amino acid cytokine with potent activating, antiviral and anti proliferative properties, produced as a pro-peptide with an additional 23 amino acid N-terminal signal peptide sequence having a molecular weight of ~20 kDa. IFN $\gamma$  is predominantly secreted by activated T lymphocytes in response to specific mitogens as a result of infection ([Rhodes et al. 2000](#)).

Mouse anti bovine  $\gamma$  interferon antibody, clone CC302 has been demonstrated to be reactive to a number of mammalian species including human, sheep, dog, pig, goat and mink ([Pedersen et al. 2002](#)). Mouse anti Bovine IFN $\gamma$  antibody, clone CC302 has been used successfully for the evaluation of  $\gamma$  interferon levels in the sera of calves naturally infected with *M. avium* subsp *paratuberculosis* ([Appana et al. 2013](#)) as a detection reagent using an ELISA.

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**Flow Cytometry** Use 10ul of the suggested working dilution to label  $1 \times 10^6$  cells in 100ul.

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**ELISA** [Biotinylated mouse anti bovine IFN \$\gamma\$ , clone CC302](#), may be used as the detection reagent in a sandwich ELISA with [purified mouse anti bovine IFN \$\gamma\$ , clone CC330](#), as the capture reagent and [recombinant bovine IFN \$\gamma\$](#)  as the standard.

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**References**

1. Hasvold, H.J. et al. (2002) *In vitro* responses to purified protein derivate of caprine T lymphocytes following vaccination with live strains of *Mycobacterium avium* subsp *paratuberculosis*. [Vet Immunol Immunopathol. 90 \(1-2\): 79-89.](#)
2. Mwangi, W. et al. (2002) DNA-encoded fetal liver tyrosine kinase 3 ligand and granulocyte macrophage-colony-stimulating factor increase dendritic cell recruitment to the inoculation site and enhance antigen-specific CD4<sup>+</sup> T cell responses induced by DNA vaccination of outbred animals. [J Immunol. 169 \(7\): 3837-46.](#)

3. Pedersen, L.G. *et al.* (2002) Identification of monoclonal antibodies that cross-react with cytokines from different animal species. [Vet Immunol Immunopathol. 88 \(3-4\): 111-22.](#)
4. Aasted, B. *et al.* (2002) Cytokine profiles in peripheral blood mononuclear cells and lymph node cells from piglets infected in utero with porcine reproductive and respiratory syndrome virus. [Clin Diagn Lab Immunol. 9 \(6\): 1229-34.](#)
5. Nielsen, L. *et al.* (2009) Lymphotropism and host responses during acute wild-type canine distemper virus infections in a highly susceptible natural host. [J Gen Virol. 90: 2157-65.](#)
6. Jaber, J.R. *et al.* (2010) Cross-reactivity of anti-human, anti-porcine and anti-bovine cytokine antibodies with cetacean tissues. [J Comp Pathol. 143: 45-51.](#)
7. Martel, C.J. & Aasted, B. (2009) Characterization of antibodies against ferret immunoglobulins, cytokines and CD markers. [Vet Immunol Immunopathol. 132:109-15.](#)
8. Sow, F.B. *et al.* (2011) Respiratory syncytial virus is associated with an inflammatory response in lungs and architectural remodeling of lung-draining lymph nodes of newborn lambs. [Am J Physiol Lung Cell Mol Physiol. 300 \(1\): L12-24.](#)
9. 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.](#)
10. Lybeck, K.R. *et al.* (2009) Neutralization of interleukin-10 from CD14(+) monocytes enhances gamma interferon production in peripheral blood mononuclear cells from *Mycobacterium avium* subsp. *paratuberculosis*-infected goats. [Clin Vaccine Immunol. 16 \(7\): 1003-11.](#)
11. Contreras, V. *et al.* (2010) Existence of CD8 $\alpha$ -like dendritic cells with a conserved functional specialization and a common molecular signature in distant mammalian species. [J Immunol. 185: 3313-25.](#)
12. Fellman, C.L. *et al.* (2011) Cyclosporine A affects the *in vitro* expression of T cell activation-related molecules and cytokines in dogs. [Vet Immunol Immunopathol. 140: 175-80.](#)
13. Pillet, S. *et al.* (2011) Cellular immune response in the presence of protective antibody levels correlates with protection against 1918 influenza in ferrets. [Vaccine. 29 \(39\): 6793-801.](#)
14. Jensen, T.H. *et al.* (2009) Early life DNA vaccination with the H gene of Canine distemper virus induces robust protection against distemper. [Vaccine. 27: 5178-83.](#)
15. Skyberg, J.A. *et al.* (2011) Murine and bovine  $\gamma\delta$  T cells enhance innate immunity against *Brucella abortus* infections. [PLoS One. 6:e21978.](#)
16. 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.](#)
17. Costa-Pereira, C. *et al.* (2015) One-year timeline kinetics of cytokine-mediated cellular immunity in dogs vaccinated against visceral leishmaniasis. [BMC Vet Res. 11 \(1\): 92.](#)
18. 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.](#)
19. Maślanka T *et al.* (2012) The presence of CD25 on bovine WC1+  $\gamma\delta$  T cells is positively correlated with their production of IL-10 and TGF- $\beta$ , but not IFN- $\gamma$ . [Pol J Vet Sci. 15 \(1\): 11-20.](#)
20. Duncombe, L. *et al.* (2013) Investigating the Use of Protein Saver Cards for Storage and Subsequent Detection of Bovine Anti-*Brucella abortus* Smooth Lipopolysaccharide

- Antibodies and Gamma Interferon. [Clin Vaccine Immunol. 20: 1669-74.](#)
21. Verhelst, D. *et al.* (2014) Parasite distribution and associated immune response during the acute phase of *Toxoplasma gondii* infection in sheep. [BMC Vet Res. 2014 Dec 16;10\(1\):293.](#)
22. Köhler, H, *et al.* (2015) Characterization of a caprine model for the subclinical initial phase of *Mycobacterium avium* subsp. paratuberculosis infection [BMC Veterinary Research. 11 \(1\): 74.](#)
23. Moreira, M.L. *et al.* (2016) Vaccination against canine leishmaniasis increases the phagocytic activity, nitric oxide production and expression of cell activation/migration molecules in neutrophils and monocytes. [Vet Parasitol. 220: 33-45.](#)
24. Rodríguez-Gómez IM *et al.* (2016) Expression of T-bet, Eomesodermin and GATA-3 in porcine  $\alpha\beta$  T cells. [Dev Comp Immunol. 60: 115-26.](#)
25. Taylor, G. *et al.* (2015) Efficacy of a virus-vectored vaccine against human and bovine respiratory syncytial virus infections. [Sci Transl Med. 7 \(300\): 300ra127.](#)
26. Moreira, M.L. *et al.* (2015) Cross-reactivity of commercially available anti-human monoclonal antibodies with canine cytokines: establishment of a reliable panel to detect the functional profile of peripheral blood lymphocytes by intracytoplasmic staining. [Acta Vet Scand. 57: 51.](#)
27. El-Naggar, M.M. *et al.* (2015) Development of an improved ESAT-6 and CFP-10 peptide-based cytokine flow cytometric assay for bovine tuberculosis. [Comp Immunol Microbiol Infect Dis. 42: 1-7.](#)
28. McGill, J.L. *et al.* (2016) Vaccination with an Attenuated Mutant of *Ehrlichia chaffeensis* Induces Pathogen-Specific CD4+ T Cell Immunity and Protection from Tick-Transmitted Wild-Type Challenge in the Canine Host. [PLoS One. 11 \(2\): e0148229.](#)
29. Vida, B. *et al.* (2016) Immunologic progression of canine leishmaniasis following vertical transmission in United States dogs. [Vet Immunol Immunopathol. 169: 34-8.](#)
30. Totté, P. *et al.* (2010) CD62L defines a subset of pathogen-specific bovine CD4 with central memory cell characteristics. [Dev Comp Immunol. 34 \(2\): 177-82.](#)
31. Sun, L. *et al.* (2012) The role of proliferation in the regulation of interferon gamma (IFN $\gamma$ ) expression in foals. [Dev Comp Immunol. 36 \(3\): 534-9.](#)
32. Reber, A.J. *et al.* (2006) Evaluation of multiple immune parameters after vaccination with modified live or killed bovine viral diarrhea virus vaccines. [Comp Immunol Microbiol Infect Dis. 29 \(1\): 61-77.](#)
33. Katepalli, M.P. *et al.* (2008) The effect of age and telomere length on immune function in the horse. [Dev Comp Immunol. 32 \(12\): 1409-15.](#)
34. Hansen, S. *et al.* (2013) Age-related changes in intracellular expression of IFN- $\gamma$  and TNF- $\alpha$  in equine lymphocytes measured in bronchoalveolar lavage and peripheral blood. [Dev Comp Immunol. 39 \(3\): 228-33.](#)
35. Boshra H *et al.* (2015) A lumpy skin disease virus deficient of an IL-10 gene homologue provides protective immunity against virulent capripoxvirus challenge in sheep and goats. [Antiviral Res. 123: 39-49.](#)
36. Hedges, J.F. *et al.* (2015) Amphotericin B stimulates  $\gamma\delta$  T and NK cells, and enhances protection from *Salmonella* infection. [Innate Immun. 21 \(6\): 598-608.](#)
37. Johnson, W.C. *et al.* (2008) Bovine WC1(-) gammadeltaT cells incubated with IL-15 express the natural cytotoxicity receptor CD335 (NKp46) and produce IFN-gamma in response to exogenous IL-12 and IL-18. [Dev Comp Immunol. 32 \(8\): 1002-10.](#)
38. 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\(1\): 95.](#)

39. Maggioli, M.F. *et al.* (2016) Increased TNF- $\alpha$ /IFN- $\gamma$ /IL-2 and Decreased TNF- $\alpha$ /IFN- $\gamma$  Production by Central Memory T Cells Are Associated with Protective Responses against Bovine Tuberculosis Following BCG Vaccination. [Front Immunol. 7: 421.](#)

40. Cassady-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 \(2\)Jan 26 \[Epub ahead of print\].](#)

41. Wattegedera, S.R. *et al.* (2017) Enhancing the toolbox to study IL-17A in cattle and sheep. [Vet Res. 48 \(1\): 20.](#)

42. 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.](#)

43. Higgins, J.L. *et al.* (2018) Cell mediated immune response in goats after experimental challenge with the virulent *Brucella melitensis* strain 16M and the reduced virulence strain Rev. 1. [Vet Immunol Immunopathol. 202: 74-84.](#)

44. Roos, E.O. *et al.* (2018) IP-10: A potential biomarker for detection of Mycobacterium bovis infection in warthogs (*Phacochoerus africanus*). [Vet Immunol Immunopathol. 201: 43-8.](#)

45. Aguiar-Soares, R.D.O. *et al.* (2020) Phase I and II Clinical Trial Comparing the LBSap, Leishmune<sup>®</sup>, and Leish-Tec<sup>®</sup> Vaccines against Canine Visceral Leishmaniasis. [Vaccines \(Basel\). 8 \(4\)Nov 17 \[Epub ahead of print\].](#)

46. Fedorka, C.E. *et al.* (2019) Alteration of the mare's immune system by the synthetic progestin, altrenogest. [Am J Reprod Immunol. 82 \(2\): e13145.](#)

47. Lacasta, A. *et al.* (2021) Synergistic Effect of Two Nanotechnologies Enhances the Protective Capacity of the *Theileria parva* Sporozoite p67C Antigen in Cattle. [J Immunol. Jan 08 \[Epub ahead of print\].](#)

48. Arrieta-Villegas, C. *et al.* (2020) Immunogenicity and Protection against *Mycobacterium caprae* Challenge in Goats Vaccinated with BCG and Revaccinated after One Year. [Vaccines \(Basel\). 8 \(4\): 751.](#)

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**Further Reading**

1. Rhodes, S. *et al.* (2000) Distinct response kinetics of gamma interferon and interleukin-4 in bovine tuberculosis. [Infect Immun. 68:5393-400.](#)

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**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. Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.

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**Guarantee**

12 months from date of despatch

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**Health And Safety Information**

Material Safety Datasheet documentation #10040 available at: <https://www.bio-rad-antibodies.com/SDS/MCA1783B>

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**Regulatory**

For research purposes only

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**North & South** Tel: +1 800 265 7376

**America** Fax: +1 919 878 3751

Email: [antibody\\_sales\\_us@bio-rad.com](mailto: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](mailto: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](mailto:antibody_sales_de@bio-rad.com)

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