

## Datasheet: MCA1783B BATCH NUMBER 150896A

Description:	MOUSE ANTI BOVINE INTERFERON GAMMA:Biotin
Specificity:	IFN GAMMA
Other names:	INTERFERON GAMMA
Format:	Biotin
Product Type:	Monoclonal Antibody
Clone:	CC302
Isotype:	lgG1
Quantity:	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.biorad-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	<ul> <li>Reacts with: Human, Pig, Dog, Horse, Sheep, Goat, Dolphin, Ferret, Mink, Fin Whale, Rabbit</li> <li>Based on sequence similarity, is expected to react with:Mustelid</li> <li>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.</li> </ul>
Product Form	Purified IgG conjugated to Biotin - liquid
Preparation	Purified IgG prepared by affinity chromatography on Protein G from tissue culture

	supernatant
Buffer Solution	Phosphate buffered saline
Preservative Stabilisers	0.09% Sodium Azide
Approx. Protein Concentrations	IgG concentration 0.5 mg/ml
External Database	
Links	UniProt:
	P07353 Related reagents
	Entrez Gene:
	281237 IFNG Related reagents
RRID	AB_324374
Fusion Partners	Spleen cells from immunised BALB/c mice were fused with cells of the mouse SP2/0 myeloma cell line.
Specificity	<b>Mouse anti Bovine IFN</b> $\gamma$ <b>antibody, clone CC302</b> , 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 <u>et al. 2000</u> ).
	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 <i>et al.</i> 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 <i>M. avium.</i> subsp <i>paratuberculosis</i> (Appana <i>et al.</i> 2013) as a detection reagent using an ELISA.
Flow Cytometry	Use 10ul of the suggested working dilution to label $1 \times 10^6$ cells in 100ul.
ELISA	Biotinylated mouse anti bovine IFNy, clone CC302, may be used as the detection reagent in a sandwich ELISA with <u>purified mouse anti bovine IFNy</u> , clone CC330, as the capture reagent and <u>recombinant bovine IFNy</u> as the standard.
References	<ol> <li>Hasvold, H.J. <i>et al.</i> (2002) <i>In vitro</i> responses to purified protein derivate of caprine T lymphocytes following vaccination with live strains of <i>Mycobacterium avium</i> subsp <i>paratuberculosis</i>. <u>Vet Immunol Immunopathol.</u> 90 (1-2): 79-89.</li> <li>Mwangi, W. <i>et al.</i> (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. <u>J Immunol.</u> 169 (7): 3837-46.</li> </ol>

3. Pedersen, L.G. *et al.* (2002) Identification of monoclonal antibodies that cross-react with cytokines from different animal species. <u>Vet Immunol Immunopathol. 88 (3-4): 111-22.</u>

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. <u>Clin Diagn Lab Immunol. 9 (6): 1229-34.</u>

5. Nielsen, L. *et al.* (2009) Lymphotropism and host responses during acute wild-type canine distemper virus infections in a highly susceptible natural host. <u>J Gen Virol. 90:</u> 2157-65.

6. Jaber, J.R. *et al.* (2010) Cross-reactivity of anti-human, anti-porcine and anti-bovine cytokine antibodies with cetacean tissues. <u>J Comp Pathol. 143: 45-51.</u>

 Martel, C.J. & Aasted, B. (2009) Characterization of antibodies against ferret immunoglobulins, cytokines and CD markers. <u>Vet Immunol Immunopathol. 132:109-15.</u>
 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. <u>Am J Physiol Lung Cell Mol Physiol. 300 (1): L12-24.</u>

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. <u>Vet Res. 42:19.</u>

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. <u>Clin Vaccine Immunol. 16</u> (7): 1003-11.

11. Contreras, V. *et al.* (2010) Existence of CD8α-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. <u>Vet Immunol Immunopathol. 140:</u> 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. <u>Vaccine. 29 (39)</u>: <u>6793-801.</u>

14. Jensen, T.H. *et al.* (2009) Early life DNA vaccination with the H gene of Canine distemper virus induces robust protection against distemper. <u>Vaccine. 27: 5178-83.</u> 15. Skyberg, J.A. *et al.* (2011) Murine and bovine  $\gamma\delta$  T cells enhance innate immunity against *Brucella abortus* infections. <u>PLoS One. 6:e21978.</u>

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. <u>PLoS One. 6: e29194.</u>

17. Costa-Pereira, C. *et al.* (2015) One-year timeline kinetics of cytokine-mediated cellular immunity in dogs vaccinated against visceral leishmaniasis. <u>BMC Vet Res. 11 (1): 92.</u> 18. Summers, C. *et al.* (2012) The distribution of immune cells in the lungs of classical and atypical ovine pulmonary adenocarcinoma. <u>Vet Immunol Immunopathol. 146: 1-7.</u> 19. Maślanka T *et al.* (2012) The presence of CD25 on bovine WC1+ γδ T cells is positively correlated with their production of IL-10 and TGF-β, but not IFN-γ. <u>Pol J Vet Sci.</u> 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. <u>BMC Vet Res. 2014 Dec</u> <u>16;10(1):293.</u>

22. Köhler. H, *et al.* (2015) Characterization of a caprine model for the subclinical initial phase of *Mycobacterium avium* subsp. paratuberculosis infection <u>BMC Veterinary</u> <u>Research. 11 (1): 74.</u>

23. Moreira, M.L. *et al.* (2016) Vaccination against canine leishmaniosis increases the phagocytic activity, nitric oxide production and expression of cell activation/migration molecules in neutrophils and monocytes. <u>Vet Parasitol. 220: 33-45.</u>

24. Rodríguez-Gómez IM *et al.* (2016) Expression of T-bet, Eomesodermin and GATA-3 in porcine  $\alpha\beta$  T cells. <u>Dev Comp Immunol. 60: 115-26.</u>

25. Taylor, G. *et al.* (2015) Efficacy of a virus-vectored vaccine against human and bovine respiratory syncytial virus infections. <u>Sci Transl Med. 7 (300): 300ra127.</u>

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. <u>Acta</u> <u>Vet Scand. 57: 51.</u>

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. <u>Comp Immunol Microbiol Infect Dis. 42: 1-7.</u>

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. <u>PLoS One. 11 (2): e0148229.</u>
29. Vida, B. *et al.* (2016) Immunologic progression of canine leishmaniosis following

vertical transmission in United States dogs. <u>Vet Immunol Immunopathol. 169: 34-8.</u> 30. Totté, P. *et al.* (2010) CD62L defines a subset of pathogen-specific bovine CD4 with central memory cell characteristics. <u>Dev Comp Immunol. 34 (2): 177-82.</u>

31. Sun, L. *et al.* (2012) The role of proliferation in the regulation of interferon gamma (IFNγ) expression in foals. <u>Dev Comp Immunol. 36 (3): 534-9.</u>

32. Reber, A.J. *et al.* (2006) Evaluation of multiple immune parameters after vaccination with modified live or killed bovine viral diarrhea virus vaccines. <u>Comp Immunol Microbiol Infect Dis. 29 (1): 61-77.</u>

33. Katepalli, M.P. *et al.* (2008) The effect of age and telomere length on immune function in the horse. <u>Dev Comp Immunol. 32 (12): 1409-15.</u>

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. <u>Antiviral Res. 123: 39-49.</u>

36. Hedges, J.F. *et al.* (2015) Amphotericin B stimulates γδ T and NK cells, and enhances protection from *Salmonella* infection. <u>Innate Immun. 21 (6): 598-608.</u>

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. <u>Dev Comp Immunol. 32 (8): 1002-10.</u>
38. Dewals, B.G., *et al.*I (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 <u>Vet Res.</u>
	<u>42(1): 95.</u>
	39. Maggioli, M.F. <i>et al.</i> (2016) Increased $INF-\alpha/IFN-\gamma/IL-2$ and Decreased $INF-\alpha/IFN-\gamma$
	Production by Central Memory I Cells Are Associated with Protective Responses against
	Bovine Tuberculosis Following BCG Vaccination. Front Immunol. 7: 421.
	40. Cassady-cain, R.L. <i>et al.</i> (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. <u>Vet Res. 48 (1): 20.</u>
	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. <u>PLoS Negl Trop Dis. 12 (4):</u> e0006445.
	43. Higgins, J.L. <i>et al.</i> (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. <i>et al.</i> (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. <i>et al.</i> (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. <i>et al.</i> (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 <i>Theileria parva</i> Sporozoite p67C Antigen in Cattle, J Immunol.
	Jan 08 [Epub ahead of print].
	48. Arrieta-Villegas, C. <i>et al.</i> (2020) Immunogenicity and Protection against
	Mycobacterium caprae Challenge in Goats Vaccinated with BCG and Revaccinated after
	One Year. <u>Vaccines (Basel). 8 (4): 751.</u>
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.
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.
Guarantee	12 months from date of despatch
Health And Safety	Material Safety Datasheet documentation #10040 available at
Information	https://www.bio-rad-antibodies.com/SDS/MCA1783B

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