

## Datasheet: MCA2311GA

**BATCH NUMBER 155525**

<b>Description:</b>	MOUSE ANTI PIG CD163
<b>Specificity:</b>	CD163
<b>Format:</b>	Purified
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	2A10/11
<b>Isotype:</b>	IgG1
<b>Quantity:</b>	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](http://www.bio-rad-antibodies.com/protocols).

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	▪			1/50 - 1/200
Immunohistology - Frozen	▪			
Immunohistology - Paraffin			▪	
ELISA			▪	
Immunoprecipitation	▪			
Western Blotting (1)	▪			
Immunofluorescence	▪			
Functional Assays (2)			▪	

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.

**(1) Clone 2A10/11 recognizes porcine CD163 under non-reducing conditions.**

**(2) Removal of sodium azide is recommended prior to use in functional assays.**

**Bio-Rad recommend the use of [EQU003](#) for this purpose.**

<b>Target Species</b>	Pig
<b>Product Form</b>	Purified IgG - liquid
<b>Preparation</b>	Purified IgG prepared by affinity chromatography on Protein A from tissue culture supernatant
<b>Buffer Solution</b>	Phosphate buffered saline

<b>Preservative Stabilisers</b>	0.09% Sodium Azide (NaN <sub>3</sub> )
<b>Carrier Free</b>	Yes
<b>Approx. Protein Concentrations</b>	IgG concentration 1.0 mg/ml
<b>Immunogen</b>	Porcine alveolar macrophages.
<b>External Database Links</b>	<p><b>UniProt:</b>  <a href="#">Q2VL90</a>    <a href="#">Related reagents</a></p> <p><b>Entrez Gene:</b>  <a href="#">397031</a>    CD163    <a href="#">Related reagents</a></p>
<b>Synonyms</b>	M130
<b>Fusion Partners</b>	Spleen cells from immunised BALB/c mice were fused with cells of the X63-Ag.8.653 myeloma cell line.
<b>Specificity</b>	<p><b>Mouse anti Pig CD163 antibody, clone 2A10/11</b> recognises porcine CD163, a ~120 kDa single pass type 1 transmembrane cell surface glycoprotein expressed on cells of the monocyte/macrophage lineage. The expression levels of CD163 vary during the course of macrophage differentiation. The highest levels of CD163 expression are found on tissue macrophages but bone marrow derived cells are CD163 negative. Expression of CD163 on peripheral blood monocytes varies between about 5% and 50% depending on the donor (<a href="#">Sanchez et al. 1999</a>).</p> <p>Mouse anti Pig CD163, clone 2A10/11 is reported to inhibit both African swine fever infection and viral particle binding to alveolar macrophages in a dose-dependent manner (<a href="#">Sanchez-Torres et al. 2003</a>).</p>
<b>Flow Cytometry</b>	Use 10ul of the suggested working dilution to 1x10 <sup>6</sup> cells in 100ul.
<b>Western Blotting</b>	Clone 2A10/11 detects a band of approximately 120kD in alveolar macrophage cell lysates under non-reducing conditions.
<b>References</b>	<ol style="list-style-type: none"> <li>1. Yang, P. <i>et al.</i> (2002) Immune cells in the porcine retina: distribution, characterization and morphological features. <a href="#">Invest Ophthalmol Vis Sci. 43 (5): 1488-92.</a></li> <li>2. Thacker, E. <i>et al.</i> (2001) Summary of workshop findings for porcine myelomonocytic markers. <a href="#">Vet Immunol Immunopathol. 80 (1-2): 93-109.</a></li> <li>3. Sánchez-Torres, C. <i>et al.</i> (2003) Expression of porcine CD163 on monocytes/macrophages correlates with permissiveness to African swine fever infection. <a href="#">Arch Virol. 148 (12): 2307-23.</a></li> <li>4. Gómez del Moral M <i>et al.</i> (1999) African swine fever virus infection induces tumor necrosis factor alpha production: implications in pathogenesis. <a href="#">J Virol. 73 (3): 2173-80.</a></li> <li>5. De Baere, M.I. <i>et al.</i> (2012) Interaction of the European genotype porcine reproductive</li> </ol>

- and respiratory syndrome virus (PRRSV) with sialoadhesin (CD169/Siglec-1) inhibits alveolar macrophage phagocytosis. [Vet Res. 43: 47.](#)
6. Prather, R.S. *et al.* (2013) An Intact Sialoadhesin (Sn/SIGLEC1/CD169) Is Not Required for Attachment/Internalization of the Porcine Reproductive and Respiratory Syndrome Virus. [J Virol. 87: 9538-46.](#)
  7. Delrue, I. *et al.* (2010) Susceptible cell lines for the production of porcine reproductive and respiratory syndrome virus by stable transfection of sialoadhesin and CD163. [BMC Biotechnol. 10: 48.](#)
  8. Katchman, H. *et al.* (2008) Embryonic porcine liver as a source for transplantation: advantage of intact liver implants over isolated hepatoblasts in overcoming homeostatic inhibition by the quiescent host liver. [Stem Cells. 26: 1347-55.](#)
  9. Moreno, S. *et al.* (2010) Porcine monocyte subsets differ in the expression of CCR2 and in their responsiveness to CCL2. [Vet Res. 41: 76.](#)
  10. Ondrackova, P. *et al.* (2010) Porcine mononuclear phagocyte subpopulations in the lung, blood and bone marrow: dynamics during inflammation induced by *Actinobacillus pleuropneumoniae*. [Vet Res. 41: 64.](#)
  11. Urbietá Cáceres, V.H. *et al.* (2011) Early experimental hypertension preserves the myocardial microvasculature but aggravates cardiac injury distal to chronic coronary artery obstruction. [Am J Physiol Heart Circ Physiol. 300: H693-701.](#)
  12. Das, P.B. *et al.* (2010) The minor envelope glycoproteins GP2a and GP4 of porcine reproductive and respiratory syndrome virus interact with the receptor CD163. [J Virol. 84: 1731-40.](#)
  13. Gimeno, M. *et al.* (2011) Cytokine profiles and phenotype regulation of antigen presenting cells by genotype-I porcine reproductive and respiratory syndrome virus isolates. [Vet Res. 42: 9.](#)
  14. Costa-Hurtado, M. *et al.* (2013) Changes in macrophage phenotype after infection of pigs with *Haemophilus parasuis* strains with different levels of virulence. [Infect Immun. 81\(7\): 2327-33.](#)
  15. Ma, H. *et al.* (2016) Crystal Structure of the Fifth Scavenger Receptor Cysteine-Rich Domain (SRCR5) from Porcine CD163 Reveals an Important Residue Involved in Porcine Reproductive and Respiratory Syndrome Virus Infection. [J Virol. pii: JVI.01897-16. \[Epub ahead of print\]](#)
  16. Popescu, L. *et al.* (2017) Genetically edited pigs lacking CD163 show no resistance following infection with the African swine fever virus isolate, Georgia 2007/1. [Virology. 501: 102-6.](#)
  17. Stenfeldt, C. *et al.* (2014) Morphologic and phenotypic characteristics of myocarditis in two pigs infected by foot-and mouth disease virus strains of serotypes O or A. [Acta Vet Scand. 56: 42.](#)
  18. Sang, Y. *et al.* (2014) Antiviral Regulation in Porcine Monocytic Cells at Different Activation States. [J Virol. pii: JVI.01714-14.](#)
  19. Haslauer, C.M. *et al.* (2014) Gene expression of catabolic inflammatory cytokines peak before anabolic inflammatory cytokines after ACL injury in a preclinical model. [J Inflamm \(Lond\). 11 \(1\): 34.](#)
  20. Kyrova K *et al.* (2014) The response of porcine monocyte derived macrophages and dendritic cells to *Salmonella typhimurium* and lipopolysaccharide. [BMC Vet Res. 10: 244.](#)
  21. Le Ludec, J.B. *et al.* (2016) Intradermal vaccination with un-adjuvanted sub-unit vaccines triggers skin innate immunity and confers protective respiratory immunity in

- domestic swine. [Vaccine. 34 \(7\): 914-22.](#)
22. Zhang, L. *et al.* (2016) Developing a Triple Transgenic Cell Line for High-Efficiency Porcine Reproductive and Respiratory Syndrome Virus Infection. [PLoS One. 11 \(5\): e0154238.](#)
23. Gu, M.J. *et al.* (2016) Barrier protection via Toll-like receptor 2 signaling in porcine intestinal epithelial cells damaged by deoxynivalnol. [Vet Res. 47: 25.](#)
24. Li, H. *et al.* (2015) Function of CD163 fragments in porcine reproductive and respiratory syndrome virus infection. [Int J Clin Exp Med. 8 \(9\): 15373-82.](#)
25. Deloizy, C. *et al.* (2016) Expanding the tools for identifying mononuclear phagocyte subsets in swine: Reagents to porcine CD11c and XCR1. [Dev Comp Immunol. 65: 31-40.](#)
26. Kapetanovic, R. *et al.* (2012) Pig bone marrow-derived macrophages resemble human macrophages in their response to bacterial lipopolysaccharide. [J Immunol. 188: 3382-94.](#)
27. Westover, A.J. *et al.* (2016) An Immunomodulatory Device Improves Insulin Resistance in Obese Porcine Model of Metabolic Syndrome. [J Diabetes Res. 2016: 3486727.](#)
28. Contreras, G.A. *et al.* (2016) Adipose tissue remodeling in late-lactation dairy cows during feed-restriction-induced negative energy balance. [J Dairy Sci. 99 \(12\): 10009-21.](#)
29. Garba, A. *et al.* (2017) Immortalized porcine mesenchymal cells derived from nasal mucosa, lungs, lymph nodes, spleen and bone marrow retain their stemness properties and trigger the expression of siglec-1 in co-cultured blood monocytic cells [PLOS ONE. 12 \(10\): e0186343.](#)
30. Singleton, H. *et al.* (2016) Establishing Porcine Monocyte-Derived Macrophage and Dendritic Cell Systems for Studying the Interaction with PRRSV-1. [Front Microbiol. 7: 832.](#)
31. Li, L. *et al.* (2017) Generation of murine macrophage-derived cell lines expressing porcine CD163 that support porcine reproductive and respiratory syndrome virus infection. [BMC Biotechnol. 17 \(1\): 77.](#)
32. Wu, X. *et al.* (2018) Establishment and Characterization of a High and Stable Porcine CD163-Expressing MARC-145 Cell Line. [Biomed Res Int. 2018: 4315861.](#)
33. Burkard, C. *et al.* (2017) Precision engineering for PRRSV resistance in pigs: Macrophages from genome edited pigs lacking CD163 SRCR5 domain are fully resistant to both PRRSV genotypes while maintaining biological function. [PLoS Pathog. 13 \(2\): e1006206.](#)
34. Sautter, C.A. *et al.* (2018) Phenotypic and functional modulations of porcine macrophages by interferons and interleukin-4. [Dev Comp Immunol. 84: 181-92.](#)
35. Bacou, E. *et al.* (2017)  $\beta$ 2-adrenoreceptor stimulation dampens the LPS-induced M1 polarization in pig macrophages. [Dev Comp Immunol. 76: 169-76.](#)
36. Li, P. *et al.* (2020) Susceptibility of porcine pulmonary microvascular endothelial cells to porcine reproductive and respiratory syndrome virus. [J Vet Med Sci. 82 \(9\): 1404-9.](#)

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**Further Reading**

1. Piriou-Guzylack, L. (2008) Membrane markers of the immune cells in swine: an update. [Vet Res. 39: 54.](#)

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**Storage**

Store at +4°C or at -20°C if preferred.  
Storage in frost-free freezers is not recommended.  
This product should be stored undiluted. 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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<b>Guarantee</b>	12 months from date of despatch
<b>Health And Safety Information</b>	Material Safety Datasheet documentation #10040 available at: <a href="https://www.bio-rad-antibodies.com/SDS/MCA2311GA">https://www.bio-rad-antibodies.com/SDS/MCA2311GA</a> 10040
<b>Regulatory</b>	For research purposes only

## Related Products

### Recommended Secondary Antibodies

Rabbit Anti Mouse IgG (STAR12...)	<a href="#">RPE</a>
Goat Anti Mouse IgG IgA IgM (STAR87...)	<a href="#">HRP</a>
Goat Anti Mouse IgG (STAR76...)	<a href="#">RPE</a>
Goat Anti Mouse IgG (STAR70...)	<a href="#">FITC</a>
Goat Anti Mouse IgG (H/L) (STAR117...)	<a href="#">Alk. Phos.</a> , <a href="#">DyLight@488</a> , <a href="#">DyLight@550</a> , <a href="#">DyLight@650</a> , <a href="#">DyLight@680</a> , <a href="#">DyLight@800</a> , <a href="#">FITC</a> , <a href="#">HRP</a>
Goat Anti Mouse IgG (STAR77...)	<a href="#">HRP</a>
Goat Anti Mouse IgG (Fc) (STAR120...)	<a href="#">FITC</a> , <a href="#">HRP</a>
Rabbit Anti Mouse IgG (STAR13...)	<a href="#">HRP</a>
Rabbit Anti Mouse IgG (STAR9...)	<a href="#">FITC</a>

### Recommended Negative Controls

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

<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>
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