

# Datasheet: MCA1973GA

**BATCH NUMBER 162948**

<b>Description:</b>	MOUSE ANTI PIG CD203a
<b>Specificity:</b>	CD203a
<b>Other names:</b>	SWC9
<b>Format:</b>	Purified
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	PM18-7
<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	▪			1/25 - 1/200
Immunohistology - Frozen	▪			
Immunohistology - Paraffin			▪	
ELISA			▪	
Immunoprecipitation	▪			
Western Blotting			▪	

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.

<b>Target Species</b>	Pig
<b>Product Form</b>	Purified IgG - liquid
<b>Preparation</b>	Purified IgG prepared by affinity chromatography on Protein A
<b>Buffer Solution</b>	Phosphate buffered saline
<b>Preservative Stabilisers</b>	0.09% Sodium Azide (NaN <sub>3</sub> )

Carrier Free	Yes
Approx. Protein Concentrations	IgG concentration 1.0 mg/ml
Immunogen	Porcine alveolar macrophages.
Fusion Partners	Spleen cells from immunized mice were fused with P3X63-Ag8-653 murine myeloma cells ( <a href="#">Kearney et al. 1979</a> ).
Specificity	<p><b>Mouse anti Pig CD203a, clone PM18-7</b> recognizes porcine CD203a, originally clustered as SWC9 at the Second International Swine CD Workshop (<a href="#">Dominguez et al. 1998</a>) and later identified as the porcine homologue of human ecto-nucleotidetriphosphatase / phosphodiesterase 1 or <a href="#">ENPP1</a> (<a href="#">Petersen et al. 2007</a>).</p> <p>Mouse anti Pig CD203a was originally reported to immunoprecipitate two bands, one of ~205 kDa and one of ~130 kDa (<a href="#">Dominguez et al. 1998</a>) under both reducing and non-reducing conditions. CD203a migrates as a homodimer of ~260 kDa under non-reducing conditions and a 130 kDa monomer under reducing conditions (<a href="#">Petersen et al. 2007</a>) from preparations of porcine alveolar macrophages.</p> <p>CD203a is expressed widely in macrophage populations with notably high levels on alveolar macrophages (<a href="#">Petersen et al. 2007</a>, <a href="#">Hwang et al. 2015</a>), it is not expressed on monocyte populations (<a href="#">McCullough et al. 1997</a>, <a href="#">Hwang et al. 2015</a>).</p> <p>SWC1a, expressed at very much higher levels on monocytes than mature macrophages and CD203a (SWC9), expressed exclusively on mature tissue macrophages have been used as markers of monocyte-macrophage differentiation (<a href="#">Sanchez et al. 1999</a>).</p>
Flow Cytometry	Use 10ul of the suggested working dilution to label $1 \times 10^6$ cells in 100ul
References	<ol style="list-style-type: none"> <li>1. McCullough, K.C. <i>et al.</i> (1997) Phenotype of porcine monocytic cells: modulation of surface molecule expression upon monocyte differentiation into macrophages. <a href="#">Vet Immunol Immunopathol. 58 (3-4): 265-75.</a></li> <li>2. McCullough, K.C. <i>et al.</i> (1999) Intermediate stages in monocyte-macrophage differentiation modulate phenotype and susceptibility to virus infection. <a href="#">Immunology. 98 (2): 203-12.</a></li> <li>3. Boersma, W.J. <i>et al.</i> (2001) Summary of workshop findings for porcine B-cell markers. <a href="#">Vet Immunol Immunopathol. 80 (1-2): 63-78.</a></li> <li>4. Domínguez, J. <i>et al.</i> (1998) Porcine myelomonocytic markers: summary of the Second International Swine CD Workshop. <a href="#">Vet Immunol Immunopathol. 60 (3-4): 329-41.</a></li> <li>5. Dominguez, J. <i>et al.</i> (1998) Workshop studies with monoclonal antibodies identifying a novel porcine differentiation antigen, SWC9. <a href="#">Vet Immunol Immunopathol. 60 (3-4): 343-9.</a></li> <li>6. Petersen, C.B. <i>et al.</i> (2007) Porcine ecto-nucleotide pyrophosphatase/phosphodiesterase 1 (NPP1/CD203a): cloning, transcription, expression, mapping, and identification of an NPP1/CD203a epitope for swine workshop cluster 9 (SWC9) monoclonal antibodies. <a href="#">Dev Comp Immunol. 31 (6): 618-31.</a></li> <li>7. Basta, S. <i>et al.</i> (1999) Modulation of monocytic cell activity and virus susceptibility</li> </ol>

- during differentiation into macrophages. [J Immunol. 162 \(7\): 3961-9.](#)
8. 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.](#)
  9. Sánchez, C. *et al.* (1999) The porcine 2A10 antigen is homologous to human CD163 and related to macrophage differentiation. [J Immunol. 162 \(9\): 5230-7.](#)
  10. Cantu, E. *et al.* (2006) Depletion of pulmonary intravascular macrophages prevents hyperacute pulmonary xenograft dysfunction. [Transplantation. 81 \(8\): 1157-64.](#)
  11. Basta, S. *et al.* (2001) Lipopolysaccharide and phorbol 12-myristate 13-acetate both impair monocyte differentiation, relating cellular function to virus susceptibility. [Immunology. 103 \(4\): 488-97.](#)
  12. Lithgow, P. *et al.* (2014) Correlation of cell surface marker expression with African swine fever virus infection. [Vet Microbiol. 168: 413 - 9.](#)
  13. Ondrackova, P. *et al.* (2013) Phenotypic characterisation of the monocyte subpopulations in healthy adult pigs and *Salmonella*-infected piglets by seven-colour flow cytometry. [Res Vet Sci. 94: 240 - 5.](#)
  14. Tsai, Y.C. *et al.* (2014) Differences in the expression of innate immune response-modulating genes in blood monocytes between subclinically porcine circovirus type s (PCV2)-infected and PCV2-free pigs prior to and after lipopolysaccharide stimulation *in vitro* [Taiwan Veterinary Journal. 40 \(01\): 37-48.](#)
  15. Hwang, J.H. *et al.* (2015) Characterization of monoclonal antibodies against porcine pulmonary alveolar macrophages of gnotobiotic miniature swine. [Biochem Biophys Res Commun. 461 \(2\): 427-34.](#)
  16. Shao, L. *et al.* (2016) Tissue-specific mRNA expression profiles of porcine Toll-like receptors at different ages in germ-free and conventional pigs. [Vet Immunol Immunopathol. 171: 7-16.](#)
  17. Fernández-Caballero, T. *et al.* (2018) Phenotypic and functional characterization of porcine bone marrow monocyte subsets. [Dev Comp Immunol. 81: 95-104.](#)
  18. Sautter, C.A. *et al.* (2018) Phenotypic and functional modulations of porcine macrophages by interferons and interleukin-4. [Dev Comp Immunol. 84: 181-92.](#)
  19. 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.](#)
  20. Zimmermann, C.E. *et al.* (2021) Characterization of porcine mesenchymal stromal cells and their proliferative and osteogenic potential in long-term culture. [J Stem Cells Regen Med. 17 \(2\): 49-55.](#)
  21. Jarosova, R. *et al.* (2022) Cytokine expression by CD163+ monocytes in healthy and *Actinobacillus pleuropneumoniae*-infected pigs. [Res Vet Sci. 152: 1-9.](#)

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#### Further Reading

1. Piriou-Guzylack, L. & Salmon, H. (2008) Membrane markers of the immune cells in swine: an update. [Vet Res. 39 \(6\): 54.](#)

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#### 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.

<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/MCA1973GA">https://www.bio-rad-antibodies.com/SDS/MCA1973GA</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>
Rabbit Anti Mouse IgG (STAR13...)	<a href="#">HRP</a>
Rabbit Anti Mouse IgG (STAR9...)	<a href="#">FITC</a>
Goat Anti Mouse IgG (Fc) (STAR120...)	<a href="#">FITC</a> , <a href="#">HRP</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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