

## Datasheet: MCA1973A647

<b>Description:</b>	MOUSE ANTI PIG CD203a:Alexa Fluor® 647
<b>Specificity:</b>	CD203a
<b>Other names:</b>	SWC9
<b>Format:</b>	ALEXA FLUOR® 647
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	PM18-7
<b>Isotype:</b>	IgG1
<b>Quantity:</b>	100 TESTS/1ml

### 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	▪			Neat - 1/10

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 conjugated to Alexa Fluor® 647 - liquid		
<b>Max Ex/Em</b>	<b>Fluorophore</b>	<b>Excitation Max (nm)</b>	<b>Emission Max (nm)</b>
	Alexa Fluor®647	650	665
<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> ) 1% bovine serum albumin		
<b>Approx. Protein Concentrations</b>	IgG concentration 0.05 mg/ml		

<b>Immunogen</b>	Porcine alveolar macrophages.
<b>Fusion Partners</b>	Spleen cells from immunized mice were fused with P3X63-Ag8-653 murine myeloma cells ( <a href="#">Kearney et al. 1979</a> ).
<b>Specificity</b>	<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-nucleotidpyrophosphatase / 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>
<b>Flow Cytometry</b>	Use 10µl of the suggested working dilution to label 10 <sup>6</sup> cells in 100µl
<b>References</b>	<ol style="list-style-type: none"> <li>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>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>Sánchez, C. <i>et al.</i> (1999) The porcine 2A10 antigen is homologous to human CD163 and related to macrophage differentiation. <a href="#">J Immunol. 162 (9): 5230-7.</a></li> <li>Basta, S. <i>et al.</i> (1999) Modulation of monocytic cell activity and virus susceptibility during differentiation into macrophages. <a href="#">J Immunol. 162 (7): 3961-9.</a></li> <li>Basta, S. <i>et al.</i> (2001) Lipopolysaccharide and phorbol 12-myristate 13-acetate both impair monocyte differentiation, relating cellular function to virus susceptibility. <a href="#">Immunology. 103 (4): 488-97.</a></li> <li>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>Cantu, E. <i>et al.</i> (2006) Depletion of pulmonary intravascular macrophages prevents hyperacute pulmonary xenograft dysfunction. <a href="#">Transplantation. 81 (8): 1157-64.</a></li> <li>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>Gimeno, M. <i>et al.</i> (2011) Cytokine profiles and phenotype regulation of antigen presenting cells by genotype-I porcine reproductive and respiratory syndrome virus</li> </ol>

isolates. [Vet Res. 42: 9.](#)

10. 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.](#)

11. 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 Vet J. 40 \(01\): 37-48.](#)

12. 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.](#)

13. 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.](#)

14. 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.](#)

15. Fernández-Caballero, T. *et al.* (2018) Phenotypic and functional characterization of porcine bone marrow monocyte subsets. [Dev Comp Immunol. 81: 95-104.](#)

16. Sautter, C.A. *et al.* (2018) Phenotypic and functional modulations of porcine macrophages by interferons and interleukin-4. [Dev Comp Immunol. 84: 181-92.](#)

17. 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.](#)

18. Jarosova, R. *et al.* (2022) Cytokine expression by CD163+ monocytes in healthy and *Actinobacillus pleuropneumoniae*-infected pigs. [Res Vet Sci. 152: 1-9.](#)

19. Petitpas, K. *et al.* (2022) Genetic modifications designed for xenotransplantation attenuate sialoadhesin-dependent binding of human erythrocytes to porcine macrophages. [Xenotransplantation. 29 \(6\): e12780.](#)

20. Álvarez, B. *et al.* (2023) Porcine Macrophage Markers and Populations: An Update. [Cells. 12 \(16\): 2103.](#)

21. Nieto-Pelegrín, E. *et al.* (2020) Porcine CLEC12B is expressed on alveolar macrophages and blood dendritic cells. [Dev Comp Immunol. 111: 103767.](#)

22. Boschetto, F. *et al.* (2024) Protocol for extracting and isolating porcine bone-marrow-derived macrophages from ribs. [STAR Protoc. 5 \(2\): 103085.](#)

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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.

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**Guarantee**

12 months from date of despatch

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**Health And Safety Information** Material Safety Datasheet documentation #10041 available at: <https://www.bio-rad-antibodies.com/SDS/MCA1973A647>  
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**Regulatory** For research purposes only

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## Related Products

### Recommended Negative Controls

[MOUSE IgG1 NEGATIVE CONTROL:Alexa Fluor® 647 \(MCA928A647\)](#)

<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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