Datasheet: MCA1973F

Description:	MOUSE ANTI PIG CD203a:FITC
Specificity:	CD203a
Other names:	SWC9
Format:	FITC
Product Type:	Monoclonal Antibody
Clone:	PM18-7
Isotype:	IgG1
Quantity:	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.

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	▪			Neat

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.

Target Species	Pig

Product Form	Purified IgG conjugated to Fluorescein Isothiocyanate Isomer 1 (FITC) - liquid

Max Ex/Em	**Fluorophore**	**Excitation Max (nm)**	**Emission Max (nm)**
	FITC	490	525

Preparation	Purified IgG prepared by affinity chromatography on Protein A from tissue culture supernatant

Buffer Solution	Phosphate buffered saline

Preservative Stabilisers	0.09% sodium azide (NaN_3) 1% bovine serum albumin

Approx. Protein Concentrations	IgG concentration 0.1 mg/ml

Immunogen	Porcine alveolar macrophages.
RRID	AB_324137
Fusion Partners	Spleen cells from immunized mice were fused with P3X63-Ag8-653 murine myeloma cells (Kearney *et al.* 1979).
Specificity	**Mouse anti Pig CD203a, clone PM18-7** recognizes porcine CD203a, originally clustered as SWC9 at the Second International Swine CD Workshop (Dominguez *et al.* 1998) and later identified as the porcine homologue of human ecto-nucleotidepyrophosphatase / phosphodiesterase 1 or ENPP1 (Petersen *et al.* 2007).

Mouse anti Pig CD203a was originally reported to immunoprecipitate two bands, one of ~;205 kDa and one of ~130 kDa (Dominguez *et al.* 1998) 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 (Petersen *et al.* 2007) from preparations of porcine alveolar macrophages.

CD203a is expressed widely in macrophage populations with notably high levels on alveolar macrophages (Petersen *et al.* 2007, Hwang *et al.* 2015), it is not expressed on monocyte populations (McCullough *et al.* 1997, Hwang *et al.* 2015).

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 (Sanchez *et al.* 1999). |
| **Flow Cytometry** | Use 10µl of the suggested working dilution to label 10^6 cells in 100µl |
| **References** | 1. McCullough, K.C. *et al.* (1997) Phenotype of porcine monocytic cells: modulation of surface molecule expression upon monocyte differentiation into macrophages. Vet Immunol Immunopathol. 58 (3-4): 265-75.
2. Domínguez, J. *et al.* (1998) Porcine myelomonocytic markers: summary of the Second International Swine CD Workshop. Vet Immunol Immunopathol. 60 (3-4): 329-41.
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5. 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.
6. Boersma, W.J. *et al.* (2001) Summary of workshop findings for porcine B-cell markers. Vet Immunol Immunopathol. 80 (1-2): 63-78.
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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.

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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.

Further Reading

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

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. This product is photosensitive and should be protected from light.

Guarantee	12 months from date of despatch
Health And Safety Information	Material Safety Datasheet documentation #10041 available at: https://www.bio-rad-antibodies.com/SDS/MCA1973F 10041
Regulatory	For research purposes only

Related Products

Recommended Negative Controls

MOUSE IgG1 NEGATIVE CONTROL:FITC (MCA928F)

North & South America	Tel: +1 800 265 7376 Fax: +1 919 878 3751 Email: 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	**Europe**	Tel: +49 (0) 89 8090 95 21 Fax: +49 (0) 89 8090 95 50 Email: antibody_sales_de@bio-rad.com

To find a batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets

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