Datasheet: MCA1973F

BATCH NUMBER 149092

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 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

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
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. Subsequent studies suggest that 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 10ul of the suggested working dilution to label 10^6 cells in 100ul.
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. McCullough, K.C. *et al.* (1999) Intermediate stages in monocyte-macrophage differentiation modulate phenotype and susceptibility to virus infection. Immunology. 98 (2): 203-12. 3. Boersma, W.J. *et al.* (2001) Summary of workshop findings for porcine B-cell markers. Vet Immunol Immunopathol. 80 (1-2): 63-78. 4. Domínguez, J. *et al.* (1998) Porcine myelomonocytic markers: summary of the Second International Swine CD Workshop. Vet Immunol Immunopathol. 60 (3-4): 329-41. 5. Dominguez, J. *et al.* (1998) Workshop studies with monoclonal antibodies identifying a novel porcine differentiation antigen, SWC9. Vet Immunol Immunopathol. 60 (3-4): 343-9. 6. Petersen, C.B. *et al.* (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. Dev Comp Immunol. 31 (6): 618-31. 7. Basta, S. *et al.* (1999) Modulation of monocytic cell activity and virus susceptibility 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< i> 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. 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.
18. Fernández-Caballero, T. *et al.* (2018) Phenotypic and functional characterization of porcine bone marrow monocyte subsets. Dev Comp Immunol. 81: 95-104.
19. Sautter, C.A. *et al.* (2018) Phenotypic and functional modulations of porcine macrophages by interferons and interleukin-4. Dev Comp Immunol. 84: 181-92.

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

Store at +4°C or at -20°C if preferred.

This product should be stored undiluted.

Storage in frost free freezers is not recommended. This product is photosensitive and should be protected from light.

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 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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