

Datasheet: MCA1746APC

BATCH NUMBER 154474

Description:	MOUSE ANTI PIG CD31:APC
Specificity:	CD31
Other names:	PECAM-1
Format:	APC
Product Type:	Monoclonal Antibody
Clone:	LCI-4
Isotype:	IgG1
Quantity:	100 TESTS

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 - 1/10

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

Species Cross Reactivity

Reacts with: Human

Does not react with: Mouse

N.B. Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information.

Product Form

Purified IgG conjugated to Allophycocyanin (APC) - lyophilised

Reconstitution

Reconstitute with 1ml distilled water

Max Ex/Em

Fluorophore	Excitation Max (nm)	Emission Max (nm)
APC	650	661

Preparation

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

supernatant

Buffer Solution Phosphate buffered saline

Preservative 0.09% Sodium Azide
Stabilisers 1% Bovine Serum Albumin
5% Sucrose

Immunogen Porcine CD31/human IgGFc fusion protein.

External Database Links

UniProt:
[Q95242](#) [Related reagents](#)

Entrez Gene:
[396941](#) PECAM1 [Related reagents](#)

RRID AB_1220391

Specificity **Mouse anti Pig CD31, clone LCI-4** recognizes porcine CD31, also known as Platelet endothelial cell adhesion molecule (PECAM-1). CD31 is constitutively expressed by platelets, monocytes and some lymphocytes, it is expressed by endothelial cells at a level, an order of magnitude greater than that of other cell types ([Fawcett et al.1995](#)). The extracellular region contains six Ig-like domains. Mouse anti Pig CD31, clone LCI-4 is cross reactive with human CD31 and binds to the 5th extracellular Ig domain, proximal to the transmembrane region as demonstrated by human CD31 domain deletion mutant protein binding studies ([Nasu et al.1999](#)).

Mouse anti Pig CD31, clone LCI-4 immunoprecipitates a protein of ~130 kDa from lysates of porcine aortic endothelial cells and is strongly expressed at cell junctions ([Nasu et al. 1999](#)).

Flow Cytometry Use 10ul of the suggested working dilution to label 10⁶ cells or 100ul whole blood.

References

1. Nasu, K. *et al.* (1999) Alpha-galactosyl-mediated activation of porcine endothelial cells: studies on CD31 and VE-cadherin in adhesion and signaling. [Transplantation. 68: 861-7.](#)
2. Evans, P.C. *et al.* (2001) Signaling through CD31 protects endothelial cells from apoptosis. [Transplantation. 71 \(3\): 343-4.](#)
3. Gesslein, B. *et al.* (2010) Mitogen-activated protein kinases in the porcine retinal arteries and neuroretina following retinal ischemia-reperfusion. [Mol Vis. 16: 392-407.](#)
4. Gyöngyösi, M. *et al.* (2010) Differential effect of ischaemic preconditioning on mobilisation and recruitment of haematopoietic and mesenchymal stem cells in porcine myocardial ischaemia-reperfusion. [Thromb Haemost. 104 \(2\): 376-84.](#)
5. Iohara, K. *et al.* (2008) A novel stem cell source for vasculogenesis in ischemia: subfraction of side population cells from dental pulp. [Stem Cells. 26 \(9\): 2408-18.](#)
6. Campos, E. *et al.* (2004) *In vitro* effect of classical swine fever virus on a porcine aortic endothelial cell line [Vet Res. 35: 625-33.](#)
7. Takeda, S. *et al.* (2006) Differential origin for endothelial and mesangial cells after

- transplantation of pig fetal renal primordia into rats. [Transpl Immunol. 15: 211-5.](#)
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. Poirier, N. *et al.* (2010) Inducing CTLA-4-dependent immune regulation by selective CD28 blockade promotes regulatory T cells in organ transplantation. [Sci Transl Med. 2 \(17\): 17ra10.](#)
10. Tchorsh-Yutsis, D. *et al.* (2009) Pig embryonic pancreatic tissue as a source for transplantation in diabetes: transient treatment with anti-LFA1, anti-CD48, and FTY720 enables long-term graft maintenance in mice with only mild ongoing immunosuppression. [Diabetes. 58: 1585-94.](#)
11. Waksman, R. *et al.* (2006) Intracoronary photodynamic therapy reduces neointimal growth without suppressing re-endothelialisation in a porcine model. [Heart. 92: 1138-44.](#)
12. Chatelais, M. *et al.* (2011) Gene transfer of the adaptor Lnk (SH2B3) prevents porcine endothelial cell activation and apoptosis: implication for xenograft's cytoprotection. [Xenotransplantation. 18: 108-20.](#)
13. Peng, X. *et al.* (2015) Phenotypic and Functional Properties of Porcine Dedifferentiated Fat Cells during the Long-Term Culture *In Vitro*. [Biomed Res Int. 2015: 673651.](#)
14. Chitalia, V.C. *et al.* (2011) Matrix-embedded endothelial cells are protected from the uremic milieu. [Nephrol Dial Transplant. 26: 3858-65.](#)
15. Kang, S.D. *et al.* (2013) Isolation of functional human endothelial cells from small volumes of umbilical cord blood. [Ann Biomed Eng. 41 \(10\): 2181-92.](#)
16. Graham, J.J. *et al.* (2010) Long-term tracking of bone marrow progenitor cells following intracoronary injection post-myocardial infarction in swine using MRI. [Am J Physiol Heart Circ Physiol. 299: H125-33.](#)
17. Azimzadeh, A.M. *et al.* (2014) Development of a consensus protocol to quantify primate anti-non-Gal xenoreactive antibodies using pig aortic endothelial cells. [Xenotransplantation. 21 \(6\): 555-66.](#)
18. Andrée, B. *et al.* (2014) Successful re-endothelialization of a perfusable biological vascularized matrix (BioVaM) for the generation of 3D artificial cardiac tissue. [Basic Res Cardiol. 109: 441.](#)
19. Sokoli, .A. *et al.* (2013) *Mycoplasma suis* infection results endothelial cell damage and activation: new insight into the cell tropism and pathogenicity of hemotrophic mycoplasma. [Vet Res.44: 6.](#)
20. Ramirez, H.A. *et al.* (2015) Comparative Genomic, MicroRNA, and Tissue Analyses Reveal Subtle Differences between Non-Diabetic and Diabetic Foot Skin. [PLoS One. 10 \(8\): e0137133.](#)
21. Balaoing, L.R. *et al.* (2015) Laminin Peptide-Immobilized Hydrogels Modulate Valve Endothelial Cell Hemostatic Regulation. [PLoS One. 10 \(6\): e0130749.](#)
22. Leitão, A.F. *et al.* (2016) A Novel Small-Caliber Bacterial Cellulose Vascular Prosthesis: Production, Characterization, and Preliminary *In Vivo* Testing. [Macromol Biosci. 16 \(1\): 139-50.](#)
23. Barsotti, M.C. *et al.* (2015) Oligonucleotide biofunctionalization enhances endothelial progenitor cell adhesion on cobalt/chromium stents. [J Biomed Mater Res A. 103 \(10\): 3284-92.](#)
24. Zhang, Q. *et al.* (2015) Engineering vascularized soft tissue flaps in an animal model

- using human adipose-derived stem cells and VEGF+PLGA/PEG microspheres on a collagen-chitosan scaffold with a flow-through vascular pedicle. [Biomaterials. 73: 198-213.](#)
25. Puperi, D.S. *et al.* (2015) 3-Dimensional spatially organized PEG-based hydrogels for an aortic valve co-culture model. [Biomaterials. 67: 354-64.](#)
26. Chen, P. *et al.* (2017) Altered expression of eNOS, prostacyclin synthase, prostaglandin G/H synthase, and thromboxane synthase in porcine aortic endothelial cells after exposure to human serum-relevance to xenotransplantation. [Cell Biol Int. 41 \(7\): 798-808.](#)
27. Rayat, G.R. *et al.* (2016) First update of the International Xenotransplantation Association consensus statement on conditions for undertaking clinical trials of porcine islet products in type 1 diabetes - Chapter 3: Porcine islet product manufacturing and release testing criteria. [Xenotransplantation. 23 \(1\): 38-45.](#)
28. Maïga, S. *et al.* (2017) Renal auto-transplantation promotes cortical microvascular network remodeling in a preclinical porcine model. [PLoS One. 12 \(7\): e0181067.](#)
29. Strbo, N. *et al.* (2019) Single cell analyses reveal specific distribution of anti-bacterial molecule Perforin-2 in human skin and its modulation by wounding and *Staphylococcus aureus* infection. [Exp Dermatol. 28 \(3\): 225-32.](#)
30. Ramm, R. *et al.* (2016) Decellularized GGTA1-KO pig heart valves do not bind preformed human xenoantibodies. [Basic Res Cardiol. 111 \(4\): 39.](#)
31. Häätinen, O.A. *et al.* (2019) Isolation of fresh endothelial cells from porcine heart for cardiovascular studies: a new fast protocol suitable for genomic, transcriptomic and cell biology studies. [BMC Mol Cell Biol. 20 \(1\): 32.](#)
32. Bernardini, C. *et al.* (2020) Effects of Hydrogen Sulfide Donor NaHS on Porcine Vascular Wall-Mesenchymal Stem Cells. [Int J Mol Sci. 21\(15\):5267.](#)
33. Jaff, N. *et al.* (2018) Transcriptomic analysis of the harvested endothelial cells in a swine model of mechanical thrombectomy. [Neuroradiology. 60 \(7\): 759-68.](#)

Further Reading	1. Piriou-Guzylack, L. (2008) Membrane markers of the immune cells in swine: an update. Vet Res. 39: 54.
Storage	Prior to reconstitution store at +4°C. After reconstitution store at +4°C. DO NOT FREEZE. This product should be stored undiluted. This product is photosensitive and should be protected from light. 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 #20487 available at: https://www.bio-rad-antibodies.com/SDS/MCA1746APC 20487
Regulatory	For research purposes only

Related Products

Recommended Negative Controls

[MOUSE IgG1 NEGATIVE CONTROL:APC \(MCA928APC\)](#)

North & South Tel: +1 800 265 7376

Worldwide Tel: +44 (0)1865 852 700

Europe Tel: +49 (0) 89 8090 95 21

America Fax: +1 919 878 3751

Fax: +44 (0)1865 852 739

Fax: +49 (0) 89 8090 95 50

Email: antibody_sales_us@bio-rad.com

Email: antibody_sales_uk@bio-rad.com

Email: antibody_sales_de@bio-rad.com

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

'M375357:210104'

Printed on 17 Apr 2023

© 2023 Bio-Rad Laboratories Inc | [Legal](#) | [Imprint](#)