

Datasheet: MCA1746PE

BATCH NUMBER 1608

Description:	MOUSE ANTI PIG CD31:RPE
Specificity:	CD31
Other names:	PECAM-1
Format:	RPE
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

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 R. Phycoerythrin (RPE) - lyophilized		
Reconstitution	Reconstitute with 1 ml distilled water		
Max Ex/Em	Fluorophore	Excitation Max (nm)	Emission Max (nm)
	RPE 488nm laser	496	578
Preparation	Purified IgG prepared by affinity chromatography from tissue culture supernatant		

Buffer Solution	Phosphate buffered saline
Preservative Stabilisers	0.09% Sodium Azide (NaN ₃) 1% Bovine Serum Albumin 5% Sucrose
Immunogen	Porcine CD31/human IgGFc fusion protein.
External Database Links	<p>UniProt: Q95242 Related reagents</p> <p>Entrez Gene: 396941 PECAM1 Related reagents</p>
RRID	AB_2252096
Specificity	<p>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 <i>et al.</i> 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 mutants (Nasu <i>et al.</i> 1999).</p> <p>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 <i>et al.</i> 1999).</p>
Flow Cytometry	Use 10ul of the suggested working dilution to label 10 ⁶ cells or 100ul whole blood.
References	<ol style="list-style-type: none"> 1. Nasu, K. <i>et al.</i> (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. <i>et al.</i> (2001) Signaling through CD31 protects endothelial cells from apoptosis. Transplantation. 71 (3): 343-4. 3. Gesslein, B. <i>et al.</i> (2010) Mitogen-activated protein kinases in the porcine retinal arteries and neuroretina following retinal ischemia-reperfusion. Mol Vis. 16: 392-407. 4. Gyöngyösi, M. <i>et al.</i> (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. <i>et al.</i> (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. <i>et al.</i> (2004) <i>In vitro</i> effect of classical swine fever virus on a porcine aortic endothelial cell line Vet Res. 35: 625-33. 7. Takeda, S. <i>et al.</i> (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. <i>et al.</i> (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 hemotropic 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. Hättinen, 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.](#)
34. Zhu, H. *et al.* (2022) Production of cultured meat from pig muscle stem cells. [Biomaterials. 287: 121650.](#)

Further Reading	1. Piriou-Guzylack, L. (2008) Membrane markers of the immune cells in swine: an update. Vet Res. 39: 54.
Storage	<p>Store at +4°C.</p> <p>DO NOT FREEZE</p> <p>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.</p>
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/MCA1746PE 20487
Regulatory	For research purposes only

Related Products

Recommended Negative Controls

MOUSE IgG1 NEGATIVE CONTROL:RPE (MCA928PE)

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

'M375358:210104'

Printed on 18 Jan 2024

© 2024 Bio-Rad Laboratories Inc | [Legal](#) | [Imprint](#)