

Datasheet: MCA1222A647

**BATCH NUMBER 171971**

<b>Description:</b>	MOUSE ANTI PIG CD45:Alexa Fluor® 647
<b>Specificity:</b>	CD45
<b>Other names:</b>	LCA
<b>Format:</b>	ALEXA FLUOR® 647
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	K252.1E4
<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

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</b>	0.09% sodium azide (NaN <sub>3</sub> )		
<b>Stabilisers</b>	1% bovine serum albumin		
<b>Approx. Protein</b>	IgG concentration 0.05mg/ml		

## Concentrations

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**Immunogen** Porcine peripheral blood lymphocytes.

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**RRID** AB\_11152605

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**Fusion Partners** Spleen cells from immunized BALB/c mice were fused with cells of the P3 - X63 - Ag.653 myeloma cell line.

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**Specificity** **Mouse anti Pig CD45, clone K252.1E4** recognizes an epitope common to all porcine CD45 isoforms ([Schnitzlein et al. 1998](#)). CD45 is also known as leukocyte common antigen (LCA).

Mouse anti Pig CD45, clone K252.1E4 immunoprecipitates three polypeptides of 226, 210 and 190 kDa from preparations of porcine peripheral blood mononuclear cells and shows a broad reactivity pattern with both lymphoid and myeloid cells ([Zuckermann et al. 1994](#)).

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**Flow Cytometry** Use 10µl of the suggested working dilution to label 10<sup>6</sup> cells in 100µl

## References

1. Terzic, S. *et al.* (2002) Immunophenotyping of leukocyte subsets in peripheral blood and palatine tonsils of prefattening pigs. [Vet Res Commun. 26: 273-83.](#)
2. Barker, E. *et al.* (2006) The larynx as an immunological organ: immunological architecture in the pig as a large animal model. [Clin Exp Immunol. 143: 6-14.](#)
3. Vilahur, G. *et al.* (2015) Roflumilast-induced Local Vascular Injury Is Associated with a Coordinated Proteome and Microparticle Change in the Systemic Circulation in Pigs. [Toxicol Pathol. 43 \(4\): 569-80.](#)
4. O'Leary, S. *et al.* (2004) Seminal plasma regulates endometrial cytokine expression, leukocyte recruitment and embryo development in the pig. [Reproduction. 128: 237-47.](#)
5. Zelnickova, P. *et al.* (2006) Postnatal functional maturation of blood phagocytes in pig. [Vet Immunol Immunopathol. 113: 383-91.](#)
6. Bimczok, D. *et al.* (2006) Phenotype and distribution of dendritic cells in the porcine small intestinal and tracheal mucosa and their spatial relationship to epithelial cells. [Cell Tissue Res. 325: 461-8.](#)
7. Nochi, T. *et al.* (2004) Biological role of Ep-CAM in the physical interaction between epithelial cells and lymphocytes in intestinal epithelium. [Clin Immunol. 113: 326-39.](#)
8. Bimczok, D. *et al.* (2010) Primary porcine CD11R1+ antigen-presenting cells isolated from small intestinal mucosa mature but lose their T cell stimulatory function in response to cholera toxin treatment. [Vet Immunol Immunopathol. 134: 239-48.](#)
9. Ebdrup, L. *et al.* (2008) Dynamic expression of the signal regulatory protein alpha and CD18 on porcine PBMC during acute endotoxaemia. [Scand J Immunol. 68: 430-7.](#)
10. Plánka, L. *et al.* (2009) Use of allogenic stem cells for the prevention of bone bridge formation in miniature pigs. [Physiol Res. 58: 885-93.](#)
11. Plánka, L. *et al.* (2009) Comparison of Preventive and Therapeutic Transplantations of Allogeneic Mesenchymal Stem Cells in Healing of the Distal Femoral Growth Plate Cartilage Defects in Miniature Pigs. [Acta Vet. Brno 78: 293-302.](#)
12. Plánka, L. *et al.* (2008) New options for management of posttraumatic articular cartilage defects. [Rozhl Chir. 87: 42-5.](#)
13. Splíchal, I. *et al.* (2002) *Escherichia coli* Administered into Pig Amniotic Cavity Appear

- in Fetal Airways and Attract Macrophages into Fetal Lungs. [Physiol Res. 51: 523-8.](#)
14. Juhászová, J. *et al.* (2011) Osteogenic differentiation of miniature pig mesenchymal stem cells in 2D and 3D environment. [Physiol Res. 60: 559-71.](#)
15. Heino, T.J. *et al.* (2012) Comparison of the osteogenic capacity of minipig and human bone marrow-derived mesenchymal stem cells. [J Orthop Res. 30: 1019-25.](#)
16. Stepanova, H. *et al.* (2012) CD4+ and  $\gamma\delta$ TCR+ T lymphocytes are sources of interleukin-17 in swine. [Cytokine. 58: 152-7.](#)
17. Hester, S.N. *et al.* (2012) Intestinal and systemic immune development and response to vaccination are unaffected by dietary (1,3/1,6)- $\beta$ -D-glucan supplementation in neonatal piglets. [Clin Vaccine Immunol. 19: 1499-508.](#)
18. Noort, W.A. *et al.* (2011) Human versus porcine mesenchymal stromal cells: phenotype, differentiation potential, immunomodulation and cardiac improvement after transplantation. [J Cell Mol Med. 16: 1827-39.](#)
19. Thorum, S.C. *et al.* (2013) Impact of diet on development of bronchial-associated immunity in the neonatal piglet. [Vet Immunol Immunopathol. 151: 63-72.](#)
20. Tran, L.A. *et al.* (2010) Gadonanotubes as Magnetic Nanolabels for Stem Cell Detection [Biomaterials. 31: 9482-91.](#)
21. Thorum, S.C. *et al.* (2013) Dietary (1,3/1,6)- $\beta$ -D-glucan decreases transforming growth factor  $\beta$  expression in the lung of the neonatal piglet. [Nutr Res. 33 \(4\): 322-31.](#)
22. Koskinas, K.C. *et al.* (2013) Synergistic effect of local endothelial shear stress and systemic hypercholesterolemia on coronary atherosclerotic plaque progression and composition in pigs. [Int J Cardiol. 169 \(6\): 394-401.](#)
23. Franzoni, G. *et al.* (2013) Assessment of the Phenotype and Functionality of Porcine CD8 T Cell Responses following Vaccination with Live Attenuated Classical Swine Fever Virus (CSFV) and Virulent CSFV Challenge. [Clin Vaccine Immunol. 20: 1604-16.](#)
24. Filová E, *et al.* (2009) Regionally-selective cell colonization of micropatterned surfaces prepared by plasma polymerization of acrylic acid and 1,7-octadiene. [Physiol Res. 58: 669-84.](#)
25. Bimczok, D. *et al.* (2005) Site-specific expression of CD11b and SIRPalpha (CD172a) on dendritic cells: implications for their migration patterns in the gut immune system. [Eur J Immunol. 35: 1418-27.](#)
26. Sun, Z. *et al.* (2013) Scaffold-Based Delivery of Autologous Mesenchymal Stem Cells for Mandibular Distraction Osteogenesis: Preliminary Studies in a Porcine Model. [PLoS One. 8: e74672.](#)
27. Post, I.C. *et al.* (2013) Characterization and quantification of porcine circulating endothelial cells. [Xenotransplantation. 20: 18-26.](#)
28. Foubert, P. *et al.* (2015) Uncultured adipose-derived regenerative cells (ADRCs) seeded in collagen scaffold improves dermal regeneration, enhancing early vascularization and structural organization following thermal burns. [Burns. 41 \(7\): 1504-16.](#)
29. 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.](#)
30. Antonson, A.M. *et al.* (2017) Maternal viral infection during pregnancy elicits anti-social behavior in neonatal piglet offspring independent of postnatal microglial cell activation. [Brain Behav Immun. 59: 300-312.](#)

31. Westover, A.J. *et al.* (2016) An Immunomodulatory Device Improves Insulin Resistance in Obese Porcine Model of Metabolic Syndrome. [J Diabetes Res. 2016: 3486727.](#)
32. Kaczmarek, M.M. *et al.* (2013) Seminal plasma affects prostaglandin synthesis and angiogenesis in the porcine uterus. [Biol Reprod. 88 \(3\): 72.](#)
33. Valpotić, H. *et al.* (2018) Dietary supplementation with mannan oligosaccharide and clinoptilolite modulates innate and adaptive immune parameters of weaned pigs. [Pol J Vet Sci. 21 \(1\): 83-93.](#)
34. Sauerova, P. *et al.* (2019) Positive impact of dynamic seeding of mesenchymal stem cells on bone-like biodegradable scaffolds with increased content of calcium phosphate nanoparticles. [Mol Biol Rep. 46 \(4\): 4483-4500.](#)
35. McCleary, S. *et al.* (2020) Substitution of warthog NF- $\kappa$ B motifs into RELA of domestic pigs is not sufficient to confer resilience to African swine fever virus. [Sci Rep. 10 \(1\): 8951.](#)
36. Zhang, W. *et al.* (2020) Dietary Calcium and Phosphorus Amounts Affect Development and Tissue-Specific Stem Cell Characteristics in Neonatal Pigs. [J Nutr. 150 \(5\): 1086-92.](#)
37. Teuben, M.P.J. *et al.* (2022) Standardized porcine unilateral femoral nailing is associated with changes in PMN activation status, rather than aberrant systemic PMN prevalence. [Eur J Trauma Emerg Surg. 48 \(3\): 1601-11.](#)
38. McCormack, U.M. *et al.* (2019) Porcine Feed Efficiency-Associated Intestinal Microbiota and Physiological Traits: Finding Consistent Cross-Locational Biomarkers for Residual Feed Intake. [mSystems.4 \(4\): e00324-18.](#)
39. 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.](#)
40. Zhu, H. *et al.* (2022) Production of cultured meat from pig muscle stem cells. [Biomaterials. 287: 121650.](#)
41. Zhou, L. *et al.* (2022) Clinical improvement of sepsis by extracorporeal centrifugal leukocyte apheresis in a porcine model. [J Transl Med. 20 \(1\): 538.](#)
42. Arenal, Á. *et al.* (2022) Effects of Cardiac Stem Cell on Postinfarction Arrhythmogenic Substrate. [Int J Mol Sci. 23 \(24\)Dec 23 \(24\): 16211.](#)
43. Petitpas, K. *et al.* (2022) Genetic modifications designed for xenotransplantation attenuate sialoadhesin-dependent binding of human erythrocytes to porcine macrophages. [Xenotransplantation. 29 \(6\): e12780.](#)
44. Bernardini, C. *et al.* (2023) Isolation of Vascular Wall Mesenchymal Stem Cells from the Thoracic Aorta of Adult Göttingen Minipigs: A New Protocol for the Simultaneous Endothelial Cell Collection. [Animals \(Basel\). 13\(16\):2601.](#)
45. Morgante, D. *et al.* (2021) Augmentation of the insufficient tissue bed for surgical repair of hypospadias using acellular matrix grafts: A proof of concept study. [J Tissue Eng. 12: 2041731421998840.](#)
46. Dan-Jumbo, S.O. *et al.* (2024) Derivation and long-term maintenance of porcine skeletal muscle progenitor cells. [Sci Rep. 14 \(1\): 9370.](#)
47. Boschetto, F. *et al.* (2024) Protocol for extracting and isolating porcine bone-marrow-derived macrophages from ribs. [STAR Protoc. 5 \(2\): 103085.](#)
48. Bernardini, C. *et al.* (2024) Osteoinductive and regenerative potential of premixed calcium-silicate bioceramic sealers on vascular wall mesenchymal stem cells. [Int Endod J. Jun 29 \[Epub ahead of print\].](#)
49. Novotný, J. *et al.* (2024) The Use of Flow Cytometry in the Analysis of Sows'

Colostrum and Milk [Folia Veterinaria. 68 \(3\): 44-51.](#)

50. Jaudas, F. *et al.* (2025) Perinatal dysfunction of innate immunity in cystic fibrosis. [Sci Transl Med. 17 \(782\): eadk9145.](#)

51. Hu, Z. *et al.* (2025) Long-term engraftment of human stem and progenitor cells for large-scale production of functional immune cells in engineered pigs. [Nat Biomed Eng. 9 \(10\): 1691-1704.](#)

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**Further Reading** 1. Piriou-Guzylack, L. (2008) Membrane markers of the immune cells in swine: an update. [Vet Res. 39: 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. This product is photosensitive and should be protected from light.

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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/MCA1222A647>

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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 \(MCA928A647\)](#)

**Product inquiries:** [www.bio-rad-antibodies.com/technical-support](http://www.bio-rad-antibodies.com/technical-support)

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