

Datasheet: MCA1334A647

BATCH NUMBER 1605

Description:	MOUSE ANTI RAT CD31:Alexa Fluor® 647		
Specificity:	CD31		
Other names:	PECAM-1		
Format:	ALEXA FLUOR® 647		
Product Type:	Monoclonal Antibody		
Clone:	TLD-3A12		
Isotype:	lgG1		
Quantity:	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.

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	•			Neat - 1/10
Functional Assays (1)			•	

Where this antibody 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 antibody for use in their own system using appropriate negative/positive controls.

(1) Bio-Rad recommend the use of MCA1334EL for use in functional studies

Target Species	Rat			
Species Cross	Reacts with: Rhesu	us Monkey, Pig		
Reactivity	reactivity is derived	ctivity and working condition of from testing within our lice cations from the originato	aboratories, peer-rev	viewed publications o
	further information.	· ·	13. 1 10030 10101 10 10	ererences indicated it
Product Form	further information.	· ·		eleterices indicated it
Product Form Max Ex/Em	further information.		- liquid	

supernatant

	·
Buffer Solution	Phosphate buffered saline
Preservative	0.09% Sodium Azide
Stabilisers	1% Bovine Serum Albumin
Approx. Protein Concentrations	IgG concentration 0.05 mg/ml
Immunogen	Activated, Lewis rat derived microglial cells.
External Database	
Links	UniProt:
	Q3SWT0 Related reagents
	Entrez Gene:
	29583 Pecam1 Related reagents
Synonyms	Pecam
RRID	AB_566717
Fusion Partners	Spleen cells from immunised BALB/c mouse were fused with cells of the mouse SP2 myeloma cell line.
Specificity	Mouse anti Rat CD31 antibody, clone TLD-3A12 recognizes rat PECAM-1 (CD31), a 661 amino acid type 1 transmembrane protein expressed primarily on endothelial cells, platelets and leucocytes.
	Clone TLD-3A12 has been shown to partially block the proliferative response of antigen-specific CD4+ T cells to antigen-presenting cells and relevant antigen (<u>Stevenson, K.S. et al.2009</u>).
	Mouse anti Rat CD31 antibody, clone TLD-3A12 is suitable for use in IHC on formalin-fixed paraffin-embedded sections pre-treated with 0.2M boric acid, pH7.0. (Wilson et al. 2007). Mouse anti Rat CD31, clone TLD-3A12 has been shown to be cross-reactive with endothelial cells derived from rhesus macaque (Maclean et al. 2001)
Flow Cytometry	Use 10ul of the suggested working dilution to label 10 ⁶ cells in 100ul.
References	 Williams, K.C. <i>et al.</i> (1996) PECAM-1 (CD31) expression in the central nervous system and its role in experimental allergic encephalomyelitis in the rat. <u>J Neurosci Res. 45 (6):</u> 747-57. Nakao, A. <i>et al.</i> (2003) Carbon monoxide inhalation protects rat intestinal grafts from ischemia/reperfusion injury. Am J Pathol. 163: 1587-98.
	ischemia/reperfusion injury. Am J Pathol. 163: 1587-98. 3. Stevenson, K.S. <i>et al.</i> (2009) Isolation, characterization, and differentiation of thy1.1-sorted pancreatic adult progenitor cell populations. Stem Cells Dev. 18 (10): 1389-98.

- 4. Ott, I. *et al.* (2005) Endothelial-like cells expanded from CD34+ blood cells improve left ventricular function after experimental myocardial infarction. FASEB J. 19 (8): 992-4.
- 5. Fujimoto, K.L. *et al.* (2007) An elastic, biodegradable cardiac patch induces contractile smooth muscle and improves cardiac remodeling and function in subacute myocardial infarction. J Am Coll Cardiol. 49: 2292-300.
- 6. Thebault, P. *et al.* (2010) The C-type lectin-like receptor CLEC-1, expressed by myeloid cells and endothelial cells, is up-regulated by immunoregulatory mediators and moderates T cell activation. J Immunol. 183: 3099-108.
- 7. Graham, M.J. *et al.* (1998) *In vivo* distribution and metabolism of a phosphorothioate oligonucleotide within rat liver after intravenous administration. <u>J Pharmacol Exp Ther.</u> 286: 447-58.
- 8. Haywood, L. *et al.* (2003) Inflammation and angiogenesis in osteoarthritis. <u>Arthritis Rheum. 48: 2173-7.</u>
- 9. Kielian, T. and Hickey, W.F. (2010) Proinflammatory cytokine, chemokine, and cellular adhesion molecule expression during the acute phase of experimental brain abscess development. <u>Am J Pathol. 157: 647-58.</u>
- 10. Lochhead, J.J. *et al.* (2010) Oxidative stress increases blood-brain barrier permeability and induces alterations in occludin during hypoxia-reoxygenation. <u>J Cereb Blood Flow</u> Metab. 30: 1625-36.
- 11. Arkudas, A. *et al.* (2007) Fibrin gel-immobilized VEGF and bFGF efficiently stimulate angiogenesis in the AV loop model. Mol Med. 13: 480-7.
- 12. Nakao, A. *et al.* (2011) *Ex vivo* carbon monoxide delivery inhibits intimal hyperplasia in arterialized vein grafts. Cardiovasc Res. 89: 457-63.
- 13. Ohnishi, T. *et al.* (2007) Comparison of endothelial cell proliferation in normal liver and adipose tissue in B6C3F1 mice, F344 rats, and humans. Toxicol Pathol. 35: 904-9.
- 14. Schilte, M.N. *et al.* (2009) Long-term intervention with heparins in a rat model of peritoneal dialysis. Perit Dial Int. 29: 26-35.
- 15. Seegers, H.C. *et al.* (2003) Enhancement of angiogenesis by endogenous substance P release and neurokinin-1 receptors during neurogenic inflammation. <u>J Pharmacol Exp Ther. 306: 8-12.</u>
- 16. Wilson, E. *et al.* (2007) An evaluation of the immunohistochemistry benefits of boric acid antigen retrieval on rat decalcified joint tissues. J Immunol Methods. 322: 137-42.
- 17. Willis, C.L. *et al.* (2010) Protein kinase C activation modulates reversible increase in cortical blood-brain barrier permeability and tight junction protein expression during hypoxia and posthypoxic reoxygenation. <u>J Cereb Blood Flow Metab.</u> 30: 1847-59.
- 18. Salehi-Had, H. *et al.* (2011) Utilizing targeted gene therapy with nanoparticles binding alpha v beta 3 for imaging and treating choroidal neovascularization. <u>PLoS One. 6:</u> e18864.
- 19. MacLean, A.G. *et al.* (2001) Rhesus macaque brain microvessel endothelial cells behave in a manner phenotypically distinct from umbilical vein endothelial cells. <u>J Neuroimmunol. 118: 223-32.</u>
- 20. Ceelen, W. *et al.* (2007) Recombinant human erythropoietin alpha modulates the effects of radiotherapy on colorectal cancer microvessels. <u>Br J Cancer. 96: 692-700.</u>
- 21. Tung, H.C. *et al.* (2015) The Beneficial Effects of P2X7 Antagonism in Rats with Bile Duct Ligation-induced Cirrhosis. PLoS One. 10 (5): e0124654.
- 22. Oboshi, M. *et al.* (2015) Temporary dietary iron restriction affects the process of thrombus resolution in a rat model of deep vein thrombosis. <u>PLoS One. 10 (5): e0126611.</u>

- 23. Wu, S.H. *et al.* (2015) Autologous adipose-derived stem cells attenuate muscular atrophy and protect spinal cord ventral horn motor neurons in an animal model of burn injury. Cytotherapy. 17 (8): 1066-75.
- 24. Ikutomi, M. *et al.* (2015) Diverse contribution of bone marrow-derived late-outgrowth endothelial progenitor cells to vascular repair under pulmonary arterial hypertension and arterial neointimal formation. J Mol Cell Cardiol. 86: 121-35.
- 25. Ferrantelli, E. *et al.* (2016) The dipeptide alanyl-glutamine ameliorates peritoneal fibrosis and attenuates IL-17 dependent pathways during peritoneal dialysis. <u>Kidney Int.</u> 89 (3): 625-35.
- 26. Lux, M. et al. (2016) In vitro maturation of large-scale cardiac patches based on a perfusable starter matrix by cyclic mechanical stimulation. Acta Biomater. 30: 177-87.
- 27. Kotaro, S. *et al.* (2015) Responses of pulp vasculature after cavity preparation in rat molars Journal of Oral Biosciences. 57 (3): 157-64.
- 28. Teng, B.T. *et al.* (2011) Protective effect of caspase inhibition on compression-induced muscle damage. <u>J Physiol. 589: 3349-69.</u>
- 29. Kakaiy, A. *et al.* (2015) Comparing protective effect of grape seed extract versus atorvastatin on endometriosis in rat model: Evidence for immunohistochemical and biochemical alterations. <u>Vet Res Forum. 6 (2): 101-10.</u>
- 30. Brandl, A. *et al.* (2014) A novel early precursor cell population from rat bone marrow promotes angiogenesis *in vitro*. <u>BMC Cell Biol. 15: 12.</u>
- 31. Sun, C.K. *et al.* (2015) Mixed serum-deprived and normal adipose-derived mesenchymal stem cells against acute lung ischemia-reperfusion injury in rats. <u>Am J Transl Res. 7 (2): 209-31.</u>
- 32. Matsugami, H.*et al.* (2014) VEGF secretion by adipose tissue-derived regenerative cells is impaired under hyperglycemic conditions via glucose transporter activation and ROS increase. Biomed Res. 35 (6): 397-405.
- 33. Park; J.R. *et al.* (2016) Effects of Peroxisome Proliferator-Activated Receptor-δ Agonist on Cardiac Healing after Myocardial Infarction. <u>PLoS One</u>. 11 (2): e0148510.
- 34. Naaijkens BA *et al.* (2015) Acute myocardial infarction does not affect functional characteristics of adipose-derived stem cells in rats, but reduces the number of stem cells in adipose tissue. Cell Tissue Res. 362 (3): 623-32.
- 35. Lim, S. *et al.* (2017) Attenuation of carotid neointimal formation after direct delivery of a recombinant adenovirus expressing glucagon-like peptide-1 in diabetic rats. <u>Cardiovasc</u> Res. 113 (2): 183-94.
- 36. Stavenuiter, A.W. *et al.* (2015) Protective Effects of Paricalcitol on Peritoneal Remodeling during Peritoneal Dialysis. <u>Biomed Res Int. 2015</u>: 468574.
- 37. Frye, C.A. & Patrick, C.W. Jr (2002) Isolation and culture of rat microvascular endothelial cells. <u>In Vitro Cell Dev Biol Anim. 38 (4): 208-12.</u>
- 38. Jiang, Y. *et al.* (2015) SOD1 nanozyme salvages ischemic brain by locally protecting cerebral vasculature. <u>J Control Release</u>. 213: 36-44.
- 39. Mirzaei, M. *et al.* (2017) Nanosilver particles increase follicular atresia: Correlation with oxidative stress and aromatization. <u>Environ Toxicol. 32 (10): 2244-55.</u>
- 40. Sønstevold, T. *et al.* (2017) Hyperbaric oxygen treatment did not significantly affect radiation injury in the mandibular area of rats. <u>Oral Surgery, Oral Medicine, Oral Pathology</u> and Oral Radiology. [Epub ahead of print].
- 41. Ichihara, Y. *et al.* (2018) Self-assembling peptide hydrogel enables instant epicardial coating of the heart with mesenchymal stromal cells for the treatment of heart failure.

Biomaterials. 154: 12-23.

- 42. Melly, L. *et al.* (2018) Myocardial infarction stabilization by cell-based expression of controlled Vascular Endothelial Growth Factor levels. <u>J Cell Mol Med. 22 (5): 2580-91.</u>
- 43. Aminzadeh, A. *et al.* (2020) Investigating The Alterations of Oxidative Stress Status, Antioxidant Defense Mechanisms, MAP Kinase and Mitochondrial Apoptotic Pathway in Adipose-Derived Mesenchymal Stem Cells from STZ Diabetic Rats. <u>Cell J. 22 (Suppl 1):</u> 38-48.
- 44. Pedram, M.S. *et al.* (2010) Transplantation of a combination of autologous neural differentiated and undifferentiated mesenchymal stem cells into injured spinal cord of rats. Spinal Cord. 48 (6): 457-63.
- 45. Sheu, J.J. *et al.* (2012) Combination of cilostazol and clopidogrel attenuates rat critical limb ischemia. <u>J Transl Med. 10: 164.</u>
- 46. Costa, B.P. *et al.* (2018) Intestinal Epithelial Stem Cells: Distinct Behavior After Surgical Injury and Teduglutide Administration. J Invest Surg. 31 (3): 243-52.

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

Acknowledgements

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Health And Safety Information

Material Safety Datasheet documentation #10041 available at: https://www.bio-rad-antibodies.com/SDS/MCA1334A647 10041

Regulatory

For research purposes only

Related Products

Recommended Negative Controls

MOUSE IgG1 NEGATIVE CONTROL: Alexa Fluor® 647 (MCA1209A647)

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