Datasheet: MCA1230GA

Description:	RAT ANTI MOUSE CD49d
Specificity:	CD49d
Other names:	INTEGRIN ALPHA 4 CHAIN, VLA-4
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	PS/2
Isotype:	IgG2b
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	▪			1/50 - 1/100
Immunohistology - Frozen	▪			
Immunohistology - Paraffin			▪	
ELISA			▪	
Immunoprecipitation	▪			
Western Blotting			▪	

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.

Target Species

Mouse

Species Cross Reactivity

Reacts with: Human

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 - liquid

Preparation

Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant

Buffer Solution	Phosphate buffered saline
Preservative Stabilisers	0.09% sodium azide (NaN_3)
Carrier Free	Yes
Approx. Protein Concentrations	IgG concentration 1.0 mg/ml
Immunogen	P815 DBA/2 murine mastocytoma cells.
External Database Links	**UniProt:** Q00651 Related reagents **Entrez Gene:** 16401 Itga4 Related reagents
RRID	AB_566802
Fusion Partners	Spleen cells from immunized Fisher rats were fused with SP2/0 mouse myeloma cells
Specificity	**Rat anti Mouse CD49d monoclonal antibody, clone PS/2** recognizes murine alpha 4 integrin (CD49d), a ~150 kDa single pass type I membrane glycoprotein that can associate with either beta 1 integrin (CD29) or beta 7 integrin to form heterodimers CD49d/CD29 (VLA-4) and alpha4/beta7 (LPAM-1) respectively (Holzmann *et al.* 1989). CD49d is expressed on most lymphocytes, granulocytes, monocytes and thymocytes. The primary ligands for CD49d are CD106 (VCAM-1), fibronectin and MAdCAM-1 (Sheppard *et al.* 1994). Clone PS/2 has also been reported to block the binding of CD49d to its ligands (Andrew *et al.* 1994).
Flow Cytometry	Use 10µl of the suggested working dilution to label 10^6 cells in 100µl
References	1. Miyake, K. *et al.* (1991) Evidence for a role of the integrin VLA-4 in lympho-hemopoiesis. J Exp Med. 173 (3): 599-607. 2. Miyake, K. *et al.* (1991) A VCAM-like adhesion molecule on murine bone marrow stromal cells mediates binding of lymphocyte precursors in culture. J Cell Biol. 114 (3): 557-65. 3. Andrew, D.P. *et al.* (1994) Distinct but overlapping epitopes are involved in alpha 4 beta 7-mediated adhesion to vascular cell adhesion molecule-1, mucosal addressin-1, fibronectin, and lymphocyte aggregation. J Immunol. 153 (9): 3847-61. 4. Tchilian, E.Z. *et al.* (1997) Anti-alpha 4 integrin antibody induces apoptosis in murine thymocytes and staphylococcal enterotoxin B-activated lymph node T cells. Immunology. 92: 321-7. 5. Enghofer, M. *et al.* (1998) Lymphocyte transfer in streptozotocin-induced diabetes: adhesion of donor cells to islet endothelium. Am J Physiol. 274: E928-35.

6. Liu, Z.J. *et al.* (1999) A novel role for H-Ras in the regulation of very late antigen-4 integrin and VCAM-1 via c-Myc-dependent and -independent mechanisms. J Immunol. 163: 4901-8.
7. Tanneau, G.M. *et al.* (1999) Differential recruitment of T- and IgA B-lymphocytes in the developing mammary gland in relation to homing receptors and vascular addressins. J Histochem Cytochem. 47: 1581-92.
8. Fukuoka, M. *et al.* (2000) Antiadhesive function of 130-kd glycoform of CD43 expressed in CD4 T-lymphocyte clones and transfectant cell lines. Blood. 96: 4267-75.
9. Hokibara, S. *et al.* (2000) Effects of monoclonal antibodies to adhesion molecules on eosinophilic myocarditis in Toxocara canis-infected CBA/J mice. Clin Exp Immunol. 114: 236-44.
10. Bowden, R.A. *et al.* (2002) Role of alpha4 integrin and VCAM-1 in CD18-independent neutrophil migration across mouse cardiac endothelium. Circ Res. 90: 562-9.
11. Hirata, T. *et al.* (2002) P-, E-, and L-selectin mediate migration of activated CD8+ T lymphocytes into inflamed skin. J Immunol. 169: 4307-13.
12. Maus, U.A. *et al.* (2004) Pneumolysin-induced lung injury is independent of leukocyte trafficking into the alveolar space. J Immunol. 173: 1307-12.
13. Ferrer, P. *et al.* (2005) Association between pterostilbene and quercetin inhibits metastatic activity of B16 melanoma. Neoplasia. 7: 37-47.
14. Eshghi, S. *et al.* (2007) Alpha4beta1 integrin and erythropoietin mediate temporally distinct steps in erythropoiesis: integrins in red cell development. J Cell Biol. 177: 871-80.
15. Vaz, R. *et al.* (2012) Fibronectin promotes migration, alignment and fusion in an *in vitro* myoblast cell model. Cell Tissue Res. 348: 569-78.
16. Zhang, Y. *et al.* (2012) Autotaxin through lysophosphatidic acid stimulates polarization, motility, and transendothelial migration of naive T cells. J Immunol. 189: 3914-24.
17. Gillberg, L. *et al.* (2013) Effective treatment of mouse experimental colitis by alpha 2 integrin antibody: comparison with alpha 4 antibody and conventional therapy. Acta Physiol (Oxf). 207: 326-36.
18. Omenetti, S. *et al.* (2015) Dysregulated intrahepatic $CD4^+$ T-cell activation drives liver inflammation in ileitis-prone SAMP1/YitFc mice. Cell Mol Gastroenterol Hepatol. 1 (4): 406-19.
19. Chung, K.J. *et al.* (2017) A self-sustained loop of inflammation-driven inhibition of beige adipogenesis in obesity. Nat Immunol. 18 (6): 654-64.
20. Andrews, S.L. *et al.* (2023) SVEP1 influences monocyte to macrophage differentiation via integrin α4β1/α9β1 and Rho/Rac signalling. Biochim Biophys Acta Mol Cell Res. 1870 (6): 119479.

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.
Guarantee	12 months from date of despatch
Health And Safety Information	Material Safety Datasheet documentation #10040 available at: https://www.bio-rad-antibodies.com/SDS/MCA1230GA

	10040
Regulatory	For research purposes only

Related Products

Recommended Secondary Antibodies

Rabbit Anti Rat IgG (STAR16...)	DyLight®800
Rabbit Anti Rat IgG (STAR17...)	FITC
Goat Anti Rat IgG (STAR72...)	HRP
Goat Anti Rat IgG (STAR69...)	FITC
Goat Anti Rat IgG (STAR73...)	RPE
Rabbit Anti Rat IgG (STAR21...)	HRP
Goat Anti Rat IgG (MOUSE ADSORBED) (STAR71...)	DyLight®550, DyLight®650, DyLight®800
Goat Anti Rat IgG (STAR131...)	Alk. Phos., Biotin

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

'M408682:221013'

Printed on 18 Jan 2024