

Datasheet: MCA697

BATCH NUMBER 164059

Description:	MOUSE ANTI HUMAN CD49d
Specificity:	CD49d
Other names:	INTEGRIN ALPHA 4 CHAIN, VLA-4
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	HP2/1
Isotype:	IgG1
Quantity:	0.2 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	▪			1ug/5 x 10 ⁵ cells
Immunohistology - Frozen	▪			
Immunohistology - Paraffin			▪	
ELISA			▪	
Immunoprecipitation	▪			
Western Blotting			▪	
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) This product contains sodium azide, removal by dialysis is recommended prior to use in functional assays.

Target Species	Human
Species Cross Reactivity	Reacts with: Rat, Rhesus Monkey, Bovine, Pig, Cynomolgus monkey, Goat, Rabbit, Llama, Horse, Mink, Mustelid, Cat 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 from tissue culture supernatant
Buffer Solution	Phosphate buffered saline
Preservative Stabilisers	0.1% Sodium Azide
Approx. Protein Concentrations	IgG concentration 1 mg/ml
Immunogen	JM leukaemia line.
External Database Links	UniProt: P13612 Related reagents Entrez Gene: 3676 ITGA4 Related reagents
Synonyms	CD49D
RRID	AB_321449
Fusion Partners	Spleen cells from immunized BALB/c mice were fused with cells of the X63 Ag8.653 myeloma cell line.
Specificity	Mouse anti Human CD49d monoclonal antibody, clone HP2/1 recognizes human CD49d also known as integrin alpha-4 or VLA-4 subunit alpha. CD49d is a ~150kDa single pass type 1 transmembrane glycoprotein with seven FG-GAP repeats, characteristic of alpha integrins, in its extracellular domain. CD49d can be proteolytically cleaved to yield fragments of 80 and 70kDa (Hemler et al. 1987). CD49d associates with either CD29 to form VLA-4 or with Integrin beta-7 to form the Peyer's patch-specific homing receptor LPAM-1, involved in the lymphocyte migration and homing to gut-associated lymphoid tissue (Sackstein 2006) through its interaction with MadCam-1, preferentially expressed on Peyer's patch high endothelial venules and postcapillary venules in lamina propria (Briskin et al. 1997). Mouse anti human CD49d, clone HP2/1 binds to both intact and the 80kDa fragment of integrin alpha-4. CD49d is expressed on monocytes, T cells, B cells, thymocytes and Langerhans cells (de Graaf et al. 1995). Mouse anti Human CD49d, clone HP2/1 can be used in assays of VLA-4 mediated adhesion and its interaction with the VCAM-1 structure and inhibits cell binding to soluble VCAM-1 (Weller et al. 1991).

References

1. Weller, P. F. *et al.* (1991) Human eosinophil adherence to vascular endothelium mediated by binding to vascular cell adhesion molecule 1 and endothelial leukocyte adhesion molecule 1. [Proc Natl Acad Sci U S A. 88: 7430-3.](#)
2. Mattila, P. *et al.* (1992) VLA-4 integrin on sarcoma cell lines recognizes endothelial VCAM-1. Differential regulation of the VLA-4 avidity on various sarcoma cell lines. [Int J Cancer. 52 \(6\): 918-23.](#)
3. Kumagai, M. *et al.* (1995) The cross-reactivity of anti-human adhesion mAb with primate and swine cells. Leucocyte Typing V. Oxford University Press p. 1646-8.
4. Van Vliet, S. S. *et al.* (1995) Species cross reactivity (human-monkey-pig-bovine) of the adhesion structure section mAb. Leucocyte Typing V. Oxford University Press p 1607-8.
5. Sopper, S. *et al.* (1997) Lymphocyte subsets and expression of differentiation markers in blood and lymphoid organs of rhesus monkeys. [Cytometry. 29 \(4\): 351-62.](#)
6. Spring, F.A. *et al.* (2001) Intercellular adhesion molecule-4 binds alpha(4)beta(1) and alpha(V)-family integrins through novel integrin-binding mechanisms. [Blood. 98: 458-66.](#)
7. Peled, A. *et al.* (2002) Immature leukemic CD34+CXCR4+ cells from CML patients have lower integrin-dependent migration and adhesion in response to the chemokine SDF-1. [Stem Cells. 20: 259-66.](#)
8. Johnston, A. *et al.* (2004) Peripheral blood T cell responses to keratin peptides that share sequences with streptococcal M proteins are largely restricted to skin-homing CD8(+) T cells. [Clin Exp Immunol. 138 \(1\): 83-93.](#)
9. Foster, G.R. *et al.* (2004) IFN-alpha subtypes differentially affect human T cell motility. [J Immunol. 173: 1663-70.](#)
10. Rosseau, S. *et al.* (2005) *Moraxella catarrhalis*--infected alveolar epithelium induced monocyte recruitment and oxidative burst. [Am J Respir Cell Mol Biol. 32: 157-66.](#)
11. Ross, E.A. *et al.* (2006) Interaction between integrin alpha9beta1 and vascular cell adhesion molecule-1 (VCAM-1) inhibits neutrophil apoptosis. [Blood. 107: 1178-83.](#)
12. Nussbaum, G. *et al.* (2006) Peptide p277 of HSP60 signals T cells: inhibition of inflammatory chemotaxis. [Int Immunol. 18: 1413-9.](#)
13. Meister, R.K. *et al.* (2007) Progress in the discovery and definition of monoclonal antibodies for use in feline research. [Vet Immunol Immunopathol. 119: 38-46.](#)
14. Haworth, O. *et al.* (2008) A role for the integrin alpha6beta1 in the differential distribution of CD4 and CD8 T-cell subsets within the rheumatoid synovium. [Rheumatology \(Oxford\). 47: 1329-34.](#)
15. Bode, U. *et al.* (2008) Dendritic cell subsets in lymph nodes are characterized by the specific draining area and influence the phenotype and fate of primed T cells. [Immunology. 123: 480-90.](#)
16. Hyduk, S.J. *et al.* (2011) Talin-1 and kindlin-3 regulate alpha4beta1 integrin-mediated adhesion stabilization, but not G protein-coupled receptor-induced affinity upregulation. [J Immunol. 187: 4360-8.](#)
17. Canalli, A.A. *et al.* (2011) Participation of Mac-1, LFA-1 and VLA-4 integrins in the *in vitro* adhesion of sickle cell disease neutrophils to endothelial layers, and reversal of adhesion by simvastatin. [Haematologica. 96: 526-33.](#)
18. Uitterdijk, A. *et al.* (2017) Time course of VCAM-1 expression in reperfused myocardial infarction in swine and its relation to retention of intracoronary administered bone marrow-derived mononuclear cells. [PLoS One. 12 \(6\): e0178779.](#)
19. Caldwell, J.M. *et al.* (2017) Cadherin 26 is an alpha integrin-binding epithelial receptor regulated during allergic inflammation. [Mucosal Immunol. 10 \(5\): 1190-201.](#)

20. Lokugamage, N. *et al.* (2021) Use of a small molecule integrin activator as a systemically administered vaccine adjuvant in controlling Chagas disease. [NPJ Vaccines. 6 \(1\): 114.](#)

Further Reading	1. Schmitz, J.E. <i>et al.</i> (2001) Simian immunodeficiency virus (SIV)-specific cytotoxic T lymphocytes in gastrointestinal tissues of chronically SIV-infected rhesus monkeys. Blood. 98 (13): 3757-61. 2. Sanz, M.J. <i>et al.</i> (1997) Tumor necrosis factor alpha-induced eosinophil accumulation in rat skin is dependent on alpha4 integrin/vascular cell adhesion molecule-1 adhesion pathways. Blood. 90 (10): 4144-52. 3. Kuroda, M.J. <i>et al.</i> (1999) Comparative analysis of cytotoxic T lymphocytes in lymph nodes and peripheral blood of simian immunodeficiency virus-infected rhesus monkeys. J Virol. 73 (2): 1573-9. 4. 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.
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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/MCA697 10040
Regulatory	For research purposes only

Related Products

Recommended Secondary Antibodies

Rabbit Anti Mouse IgG (STAR12...)	RPE
Goat Anti Mouse IgG IgA IgM (STAR87...)	HRP
Goat Anti Mouse IgG (STAR76...)	RPE
Goat Anti Mouse IgG (STAR70...)	FITC
Rabbit Anti Mouse IgG (STAR13...)	HRP
Goat Anti Mouse IgG (Fc) (STAR120...)	FITC , HRP
Rabbit Anti Mouse IgG (STAR9...)	FITC
Goat Anti Mouse IgG (STAR77...)	HRP
Goat Anti Mouse IgG (H/L) (STAR117...)	Alk. Phos. , DyLight®488 , DyLight®550 , DyLight®650 , DyLight®680 , DyLight®800 , FITC , HRP

Recommended Negative Controls

MOUSE IgG1 NEGATIVE CONTROL (MCA928)

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

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