Datasheet: MCA697

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

RRID AB_321449

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 10⁵ 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. Bio-Rad recommend the use of EQU003 for this purpose.**

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.

Product Form Purified IgG - liquid

Preparation Purified IgG prepared from ascites or tissue culture supernatant

Buffer Solution Phosphate buffered saline

Preservative Stabilisers	0.09% 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
Fusion Partners	Spleen cells from immunised 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 framents 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 patches-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 basic studies of VLA-4 mediated adhesion and its interaction with the VCAM-1 structure and has been demonstrated to inhibit cell binding to soluble VCAM-1 (Weller *et al.* 1991).
References	1. Sánchez-Madrid, F. *et al.* (1986) VLA-3: a novel polypeptide association within the VLA molecular complex: cell distribution and biochemical characterization. Eur J Immunol. 16 (11): 1343-9. 2. 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. 3. 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. 4. 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. 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. 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.

7. 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.
8. 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.
9. 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.
10. Foster, G.R. *et al.* (2004) IFN-alpha subtypes differentially affect human T cell motility. J Immunol. 173: 1663-70.
11. 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.
12. Nussbaum, G. *et al.* (2006) Peptide p277 of HSP60 signals T cells: inhibition of inflammatory chemotaxis. Int Immunol. 18: 1413-9.
13. 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.
14. 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.
15. 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.
16. 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.
17. 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.
18. Caldwell, J.M. *et al.* (2017) Cadherin 26 is an alpha integrin-binding epithelial receptor regulated during allergic inflammation. Mucosal Immunol. Jan 4. [Epub ahead of print]
19. 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.

Further Reading

1. Schmitz, J.E. *et al.* (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. *et al.* (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. *et al.* (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.

Storage

Store at +4^{o}C or at -20^{o}C if preferred.

This product should be stored undiluted.

Storage in frost free freezers is not recommended. Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.

Shelf Life

18 months from date of despatch.

Health And Safety Information

Material Safety Datasheet documentation #10040 available at:
10040: https://www.bio-rad-antibodies.com/uploads/MSDS/10040.pdf

Regulatory	For research purposes only

Related Products

Recommended Secondary Antibodies

Goat Anti Mouse IgG IgA IgM (STAR87...)	Alk. Phos., HRP
Goat Anti Mouse IgG (STAR77...)	HRP
Rabbit Anti Mouse IgG (STAR12...)	RPE
Rabbit Anti Mouse IgG (STAR8...)	DyLight®800
Rabbit Anti Mouse IgG (STAR13...)	HRP
Goat Anti Mouse IgG (STAR76...)	RPE
Goat Anti Mouse IgG (STAR70...)	FITC
Goat Anti Mouse IgG (Fc) (STAR120...)	FITC, HRP
Rabbit Anti Mouse IgG (STAR9...)	FITC
Goat Anti Mouse IgG (H/L) (STAR117...)	Alk. Phos., DyLight®488, DyLight®549, DyLight®649, 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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