

Datasheet: MCA2028PE

BATCH NUMBER INN1701

Description:	MOUSE ANTI HUMAN CD29:RPE
Specificity:	CD29
Other names:	INTEGRIN BETA 1 CHAIN
Format:	RPE
Product Type:	Monoclonal Antibody
Clone:	12G10
Isotype:	IgG1
Quantity:	100 TESTS

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

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

Human

Species Cross Reactivity

Reacts with: Mink

Does not react with: Rat, Mouse

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 conjugated to R. Phycoerythrin (RPE) - lyophilized

Reconstitution

Reconstitute with 1.0 ml distilled water

Care should be taken during reconstitution as the protein may appear as a film at the bottom of the vial. Bio-Rad recommend that the vial is gently mixed after reconstitution.

Preparation

Purified IgG prepared by affinity chromatography on Protein A from tissue culture

supernatant

Buffer Solution Phosphate buffered saline

Preservative 0.09% Sodium Azide (NaN₃)
Stabilisers 1% Bovine Serum Albumin
5% Sucrose

Immunogen Purified human beta1 integrin preparation from HT1080 fibrosarcoma cell extract

External Database Links

UniProt:

[P05556](#) [Related reagents](#)

Entrez Gene:

[3688](#) ITGB1 [Related reagents](#)

Synonyms FNRB, MDF2, MSK12

Fusion Partners Spleen cells from an immunised BALB/c mice were fused with cells of the X63/Ag8.653 mouse myeloma cell line

Specificity **Mouse anti Human CD29 monoclonal antibody, clone 12G10** recognizes human CD29 also known as beta1 integrin or VLA-4 subunit alpha. CD29 is a ~130 kDa under reducing, ~115 kDa under non-reducing conditions single pass type I transmembrane glycoprotein. CD29 acts as the common beta subunit of the heterodimeric very late antigens 1-6, complexing with CD49a-f respectively where it forms part of the receptors for laminin , collagen and fibronectin. the VLA heterodimers mediate cell-cell and cell-matrix interactions.

Mouse anti Human CD29, clone 12G10 binding to cells adhering via VLA-4 results in actin cytoskeletal disruption and subsequent inhibition of attachment and spreading whilst 12G10 binding to cells adhering via VLA-5 results in enhancement of both these processes ([Humphries et al. 2005](#)). Clone 12G10 enhances alpha 5 beta 1-fibronectin interactions and binds to a region of CD25 containing the binding epitopes of several other anti CD29 antibody clones. However, unlike these, binding of 12G10 is enhanced in the presence of ligands such as fibronectin fragments ([Mould et al. 1995](#)). Binding of antibody clone 12G10 to the integrin β1 subunit is affected by divalent cations and the binding epitope appears to be located around residues 207-218 in the b1 subunit putative A-domain ([Mould et al. 1998](#)).

References

1. Sodek, K.L. *et al.* (2009) Compact spheroid formation by ovarian cancer cells is associated with contractile behavior and an invasive phenotype. [Int J Cancer. 124: 2060-70.](#)
2. Mould, A.P. *et al.* (1995) Regulation of integrin alpha 5 beta 1 function by anti-integrin antibodies and divalent cations. [Biochem Soc Trans. 23 \(3\): 395S.](#)
3. Mould, A.P. *et al.* (1995) Identification of a novel anti-integrin monoclonal antibody that recognises a ligand-induced binding site epitope on the beta 1 subunit. [FEBS Lett. 363](#)

[\(1-2\): 118-22.](#)

4. Matthews, B.D. *et al.* (2010) Ultra-rapid activation of TRPV4 ion channels by mechanical forces applied to cell surface [beta]1 integrins. [Integr Biol \(Camb\). 2: 435-42.](#)
5. Aasted, B. *et al.* (2007) Reactivity of monoclonal antibodies to human CD antigens with cells from mink. [Vet Immunol Immunopathol. 119: 27-37.](#)
6. Kawaguchi, N. *et al.* (2003) ADAM12 induces actin cytoskeleton and extracellular matrix reorganization during early adipocyte differentiation by regulating beta1 integrin function. [J Cell Sci. 116: 3893-904.](#)
7. Loughran, G. *et al.* (2005) Mystique is a new insulin-like growth factor-I-regulated PDZ-LIM domain protein that promotes cell attachment and migration and suppresses Anchorage-independent growth. [Mol Biol Cell. 2005 Apr;16\(4\):1811-22.](#)
8. Werner, J. *et al.* (2012) Expression of integrins and Toll-like receptors in cervical cancer: Effect of infectious agents. [Innate Immun. 18: 55-69.](#)
9. Iba, K. *et al.* (2000) The cysteine-rich domain of human ADAM 12 supports cell adhesion through syndecans and triggers signaling events that lead to beta1 integrin-dependent cell spreading. [J Cell Biol. 149: 1143-56.](#)
10. Meng, X. *et al.* (2005) Evidence for the presence of a low-mass beta1 integrin on the cell surface. [J Cell Sci. 118: 4009-16.](#)
11. Whittard, J.D. and Akiyama, S.K. (2001) Positive regulation of cell-cell and cell-substrate adhesion by protein kinase A. [J Cell Sci. 114: 3265-72.](#)
12. Rodriguez-Teja, M. *et al.* (2015) AGE-modified basement membrane cooperates with Endo180 to promote epithelial cell invasiveness and decrease prostate cancer survival. [J Pathol. 235 \(4\): 581-92.](#)
13. Zhong, C. *et al.* (1998) Rho-mediated contractility exposes a cryptic site in fibronectin and induces fibronectin matrix assembly. [J Cell Biol. 141: 539-51.](#)
14. Zhou, J. *et al.* (2008) Salvicine inactivates beta 1 integrin and inhibits adhesion of MDA-MB-435 cells to fibronectin via reactive oxygen species signaling. [Mol Cancer Res. 6: 194-204.](#)
15. Thodeti, C.K. *et al.* (2003) ADAM12/syndecan-4 signaling promotes beta 1 integrin-dependent cell spreading through protein kinase Calpha and RhoA. [J Biol Chem. 278: 9576-84.](#)
16. Lee, H. *et al.* (2006) A critical role for the membrane-type 1 matrix metalloproteinase in collagen phagocytosis. [Mol Biol Cell. 17: 4812-26.](#)
17. Gravelle, S. *et al.* (2010) Up-regulation of integrin expression in lung adenocarcinoma cells caused by bacterial infection: in vitro study. [Innate Immun. 2010 Feb;16\(1\):14-26.](#)
18. Jović, M. *et al.* (2007) EHD1 regulates beta1 integrin endosomal transport: effects on focal adhesions, cell spreading and migration. [J Cell Sci. 120: 802-14.](#)
19. Newsome, P.N. *et al.* (2014) Serum from patients with fulminant hepatic failure causes hepatocyte detachment and apoptosis by a beta(1)-integrin pathway. [Hepatology. 40: 636-45.](#)
20. Piccinno, M.S. *et al.* (2013) Adipose stromal/stem cells assist fat transplantation reducing necrosis and increasing graft performance. [Apoptosis. 18 \(10\): 1274-89.](#)
21. Lee, J. *et al.* (2013) Phloridzin isolated from *Acanthopanax senticosus* promotes proliferation of $\alpha 6$ integrin (CD 49f) and $\beta 1$ integrin (CD29) enriched for a primary keratinocyte population through the ERK-mediated mTOR pathway. [Arch Dermatol Res. 305 \(8\): 747-54.](#)

Storage Prior to reconstitution store at +4°C.
After reconstitution store at +4°C.
DO NOT FREEZE. This product should be stored undiluted. This product is photosensitive and should be protected from light.

Guarantee 12 months from date of despatch

Health And Safety Information Material Safety Datasheet documentation #20487 available at:
<https://www.bio-rad-antibodies.com/SDS/MCA2028PE>
20487

Regulatory For research purposes only

Related Products

Recommended Negative Controls

[MOUSE IgG1 NEGATIVE CONTROL:RPE \(MCA928PE\)](#)

Recommended Useful Reagents

[HUMAN SEROBLOCK \(BUF070A\)](#)

[HUMAN SEROBLOCK \(BUF070B\)](#)

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