abcam

ab36219

PE Anti-Integrin beta-1/CD29 antibody [HM beta 1-1]

Anti-Integrin beta-1/CD29 antibody [HM beta 1-1] conjugated to PE - suitable for flow cytometry, and reacts with mouse samples. Clone [HM beta 1-1] is a Armenian Hamster monoclonal antibody cited in 29 publications.

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Key facts

Isotype	IgG
Host species	Armenian hamster
Conjugation	PE
Excitation/Emission	Ex: 480;565nm, Em: 578nm
Storage buffer	pH: 7.4 Preservative: 0.09% Sodium azide Constituents: PBS, 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Native Full Length Protein corresponding to Mouse Itgb1. Database link P09055
Clone number	HM beta 1-1
Purification technique	Affinity purification Protein G
Purification notes	Purified from tissue culture supernatant.

Reactivity data

Flow Cyt

Tested

Species	Mouse
Dilution info	1/5
Notes	Use 10 µl of the suggested working dilution to label 106 cells in 100 µl. ab101026 - Armenian Hamster monoclonal IgG, is suitable for use as an isotype control with this antibody.

Target data

See full target information Integrin beta-1/CD29

Function

Integrins alpha-1/beta-1, alpha-2/beta-1, alpha-10/beta-1 and alpha-11/beta-1 are receptors for collagen. Integrins alpha-1/beta-1 and alpha-2/beta-2 recognize the proline-hydroxylated sequence G-F-P-G-E-R in collagen. Integrins alpha-2/beta-1, alpha-3/beta-1, alpha-4/beta-1, alpha-5/beta-1, alpha-8/beta-1, alpha-10/beta-1, alpha-11/beta-1 and alpha-V/beta-1 are receptors for fibronectin. Alpha-4/beta-1 recognizes one or more domains within the alternatively spliced CS-1 and CS-5 regions of fibronectin. Integrin alpha-5/beta-1 is a receptor for fibrinogen. Integrin alpha-1/beta-1, alpha-2/beta-1, alpha-6/beta-1 and alpha-7/beta-1 are receptors for lamimin. Integrin alpha-6/beta-1 (ITGA6:ITGB1) is present in oocytes and is involved in sperm-egg fusion (PubMed:10634791, PubMed:36812915). Integrin alpha-4/beta-1 is a receptor for VCAM1 and recognizes the sequence Q-I-D-S in VCAM1. Integrin alpha-9/beta-1 is a receptor for VCAM1, cytotactin and osteopontin. It recognizes the sequence A-E-I-D-G-I-E-L in cytotactin. Integrin alpha-3/beta-1 is a receptor for epiligrin, thrombospondin and CSPG4. Integrin alpha-3/beta-1 provides a docking site for FAP (seprase) at invadopodia plasma membranes in a collagen-dependent manner and hence may participate in the adhesion, formation of invadopodia and matrix degradation processes, promoting cell invasion. Alpha-3/beta-1 may mediate with LGALS3 the stimulation by CSPG4 of endothelial cells migration. Integrin alpha-V/beta-1 is a receptor for vitronectin. Beta-1 integrins recognize the sequence R-G-D in a wide array of ligands. When associated with alpha-7/beta-1 integrin, regulates cell adhesion and laminin matrix deposition (PubMed:12941630). Involved in promoting endothelial cell motility and angiogenesis (PubMed:15181153). Involved in osteoblast compaction through the fibronectin fibrillogenesis cell-mediated matrix assembly process and the formation of mineralized bone nodules (PubMed:21768292). May be involved in up-regulation of the activity of kinases such as PKC via binding to KRT1. Together with KRT1 and RACK1, serves as a platform for SRC activation or inactivation. Plays a mechanistic adhesive role during telophase, required for the successful completion of cytokinesis (PubMed:18804435). ITGA4:ITGB1 binds to fractalkine (CX3CL1) and may act as its coreceptor in CX3CR1-dependent fractalkine signaling (By similarity). ITGA4:ITGB1 and ITGA5:ITGB1 bind to PLA2G2A via a site (site 2) which is distinct from the classical ligand-binding site (site 1) and this induces integrin conformational changes and enhanced ligand binding to site 1 (By similarity). ITGA5:ITGB1 acts as a receptor for fibrillin-1 (FBN1) and mediates R-G-D-dependent cell adhesion to FBN1 (By similarity). ITGA5:ITGB1 acts as a receptor for fibronectin FN1 and mediates R-G-D-dependent cell adhesion to FN1 (By similarity). ITGA5:ITGB1 is a receptor for IL1B and binding is essential for IL1B signaling (By similarity). ITGA5:ITGB3 is a receptor for soluble CD40LG and is required for CD40/CD40LG signaling (By similarity). Plays an important role in myoblast differentiation and fusion during skeletal myogenesis (By similarity).

ITGA9:ITGB1 may play a crucial role in SVEP1/polydom-mediated myoblast cell adhesion (PubMed:22654117). Integrins ITGA9:ITGB1 and ITGA4:ITGB1 repress PRKCA-mediated L-type voltage-gated channel Ca(2+) influx and ROCK-mediated calcium sensitivity in vascular smooth muscle cells via their interaction with SVEP1, thereby inhibit vasocontraction (PubMed:35802072). Isoform 2. Isoform 2 displaces isoform 1 in striated muscles.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

This clone is reported to inhibit beta 1 integrin mediated adhesion.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Integrin beta 1 also known as CD29 ITGB1 or integrin β1 is a part of the integrin family of cell surface receptors. This protein plays a role in cell adhesion and signal transduction processes. Integrin beta 1 weighs around 88 kDa and typically expresses on the surface of various cell types including epithelial endothelial and certain blood cells. As a transmembrane receptor it interacts with extracellular matrix components such as fibronectin collagen and laminin facilitating cell-matrix adhesion which is key in maintaining cellular structure and function.
Biological function summary	Integrin beta 1 functions in cells as a component of heterodimeric complexes with alpha integrin subunits forming adhesion receptors that mediate cellular signaling. These integrins are important for processes like cell migration differentiation proliferation and apoptosis. As they interact with various extracellular ligands integrin beta 1 influences numerous cellular responses particularly in tissue remodeling wound healing and embryonic development.
Pathways	Integrin beta 1 plays significant roles in the MAPK/ERK and PI3K/Akt signaling pathways both of which are essential for cellular growth and survival signals. It forms connections with associated proteins including focal adhesion kinase (FAK) and talin which participate in mechanotransduction and signal propagation. These interactions influence cellular responses to environmental changes impacting processes such as tissue repair and immune response modulation.

Associated diseases and disorders	Integrin beta 1 associates with cancer progression and fibrosis disorders. Abnormal expression or function of integrin beta 1 can promote tumor invasion and metastasis making it a target for cancer research and potential therapeutic interventions. Furthermore in fibrosis integrin beta 1 interacts with transforming growth factor-beta (TGF-β) signaling contributing to excessive extracellular matrix production and scarring. Understanding these relationships helps in developing targeted treatments for conditions where integrin beta 1 plays a critical role.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

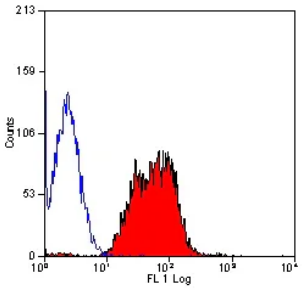
We do not recommend this combination. It is not covered by our product promise.

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1 product image



Flow Cytometry - PE Anti-Integrin beta-1/CD29 antibody [HM beta 1-1] (ab36219)

Integrin beta-1/CD29 Flow Cytometry staining using armenian hamster Anti-Integrin beta-1/CD29 antibody

ab36219 staining Integrin beta 1 in mouse thymocytes by Flow Cytometric analysis.

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