abcam

ab63490

Anti-Integrin alpha V antibody [RMV-7]

Key facts

Isotype	IgG1
Host species	Rat
Storage buffer	pH: 7.4 Preservative: 0.09% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Cell preparation containing Itgav protein. The exact immunogen used to generate this antibody is proprietary information. Database link P43406
Clone number	RMV-7
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant.

Reactivity data

IP

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt

Expected

Species	Mouse
Dilution info	1/10 - 1/100
Notes	ab18407 - Rat monoclonal IgG1, is suitable for use as an isotype control with this antibody. Use 10 µl of the suggested working dilution to label 10^6 cells in 100µl.

Target data

See full target information Itgav

Function

The alpha-V (ITGAV) integrins are receptors for vitronectin, cytotactin, fibronectin, fibrinogen, laminin, matrix metalloproteinase-2, osteopontin, osteomodulin, prothrombin, thrombospondin, TGFB1 and vWF (PubMed:10025398, PubMed:9827803). They recognize the sequence R-G-D in a wide array of ligands. Alpha-V integrins may play a role in embryo implantation, angiogenesis and wound healing (PubMed:9827803). ITGAV:ITGB3 binds to fractalkine (CX3CL1) and may act as its coreceptor in CX3CR1-dependent fractalkine signaling (By similarity). ITGAV:ITGB3 binds to NRG1 (via EGF domain) and this binding is essential for NRG1-ERBB signaling. ITGAV:ITGB3 binds to FGF1 and this binding is essential for FGF1 signaling (By similarity). ITGAV:ITGB3 binds to FGF2 and this binding is essential for FGF2 signaling (By similarity). ITGAV:ITGB3 binds to IGF1 and this binding is essential for IGF1 signaling (By similarity). ITGAV:ITGB3 binds to IGF2 and this binding is essential for IGF2 signaling (By similarity). ITGAV:ITGB3 binds to IL1B and this binding is essential for IL1B signaling (By similarity). ITGAV:ITGB3 binds 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). ITGAV:ITGB3 and ITGAV:ITGB6 act as a receptor for fibrillin-1 (FBN1) and mediate R-G-D-dependent cell adhesion to FBN1 (By similarity). Integrin alpha-V/beta-6 or alpha-V/beta-8 (ITGAV:ITGB6 or ITGAV:ITGB8) mediates R-G-D-dependent release of transforming growth factor beta-1 (TGF-beta-1) from regulatory Latency-associated peptide (LAP), thereby playing a key role in TGF-beta-1 activation (PubMed:10025398, PubMed:25127859). ITGAV:ITGB3 acts as a receptor for CD40LG (By similarity). ITGAV:ITGB3 binds to the Lilrb4a/Gp49b receptor and enhances the Lilrb4a-mediated inhibition of mast cell activation (PubMed:11323698). ITGAV:ITGB3 also suppresses marginal zone B cell antibody production through its interaction with Lilrb4a (PubMed:24935931). ITGAV:ITGB3 acts as a receptor for IBSP and promotes cell adhesion and migration to IBSP (By similarity).

Storage

Shipped at conditions	Blue Ice

Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

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

Activity summary	Integrin alpha V also known as integrin av CD51 and CD51/CD61 is a transmembrane protein with an approximate mass of 125 kDa. It functions mechanically by mediating cell adhesion and signaling through its interaction with the extracellular matrix and other cells. Integrin alpha V is widely expressed in a variety of tissues including endothelial and epithelial cells as well as some tumor cells. This protein forms heterodimers typically with beta subunits like CD61 which is also referred to as beta 3 integrin to execute its biological functions.
Biological function summary	Integrin alpha V plays a pivotal role in cellular processes such as migration proliferation and survival. It participates in the formation of multi-molecular complexes within cellular structures. The integrin av integrins particularly in conjunction with its CD51/CD61 form contribute to the regulation of angiogenesis immune response and wound healing. These functions arise from the integrin's ability to act as a receptor for numerous ligands including fibrinogen fibronectin and vitronectin.
Pathways	Integrin alpha V is a critical component of the integrin signaling and focal adhesion pathways. These pathways involve a network of interactions that include proteins like focal adhesion kinase (FAK) and Src family kinases. Integrin alpha V's interaction within these pathways assists in transmitting mechanical signals from the extracellular environment to the intracellular signaling cascades affecting cytoskeleton dynamics and gene expression. The pathway interactions with integrin av also coordinate complex signaling with other receptors and matrix proteins like laminins enhancing cellular communication and response to environmental changes.
Associated diseases and disorders	Integrin alpha V's dysregulation associates with conditions such as cancer and fibrosis. Overexpression or aberrant functioning of integrin av contributes to tumor progression and metastasis by promoting angiogenesis and cell migration. In fibrotic diseases the protein's interactions with the extracellular matrix components are altered leading to excessive tissue scarring and dysfunction. Furthermore integrin alpha V interplays with proteins such as matrix metalloproteinases (MMPs) in the tumor microenvironment facilitating tissue remodeling and cancer cell invasion.

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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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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