abcam

ab11470

Anti-Integrin alpha V antibody [P2W7]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Clone number	P2W7
Purification technique	Affinity purification Protein A
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	The antibody is Protein A purified from tissue culture supernatant.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1-10 µg/mL
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

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 and vWF. They recognize the sequence R-G-D in a wide array of ligands. ITGAV:ITGB3 binds to fractalkine (CX3CL1) and may act as its coreceptor in CX3CR1-dependent fractalkine signaling (PubMed:23125415). ITGAV:ITGB3 binds to NRG1 (via EGF domain) and this binding is essential for NRG1-ERBB signaling (PubMed:20682778). ITGAV:ITGB3 binds to FGF1 and this binding is essential for FGF1 signaling (PubMed:18441324). ITGAV:ITGB3 binds to FGF2 and this binding is essential for FGF2 signaling (PubMed:28302677). ITGAV:ITGB3 binds to IGF1 and this binding is essential for IGF1 signaling (PubMed:19578119). ITGAV:ITGB3 binds to IGF2 and this binding is essential for IGF2 signaling (PubMed:28873464). ITGAV:ITGB3 binds to IL1B and this binding is essential for IL1B signaling (PubMed:29030430). 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 (PubMed:18635536, PubMed:25398877). ITGAV:ITGB3 and ITGAV:ITGB6 act as receptors for fibrillin-1 (FBN1) and mediate R-G-D-dependent cell adhesion to FBN1 (PubMed:12807887, PubMed:17158881). 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:15184403, PubMed:22278742, PubMed:28117447). ITGAV:ITGB3 acts as a receptor for CD40LG (PubMed:31331973). ITGAV:ITGB3 acts as a receptor for IBSP and promotes cell adhesion and migration to IBSP (PubMed:10640428). (Microbial infection) Integrin ITGAV:ITGB5 acts as a receptor for Adenovirus type C. (Microbial infection) Integrin ITGAV:ITGB5 and ITGAV:ITGB3 act as receptors for Coxsackievirus A9 and B1. (Microbial infection) Integrin ITGAV:ITGB3 acts as a receptor for Herpes virus 8/HHV-8. (Microbial infection) Integrin ITGAV:ITGB6 acts as a receptor for herpes simplex 1/HHV-1. (Microbial infection) Integrin ITGAV:ITGB3 acts as a receptor for Human parechovirus 1. (Microbial infection) Integrin ITGAV:ITGB3 acts as a receptor for West nile virus. (Microbial infection) In case of HIV-1 infection, the interaction with extracellular viral Tat protein seems to enhance angiogenesis in Kaposi's sarcoma lesions.

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
Storage information	Avoid freeze / thaw cycle

Notes

Human alpha v is about 150-160kDa under non-reducing conditions. Under reducing conditions it is cleaved into 2 bands of about 125-130kDa +20-25kDa.

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

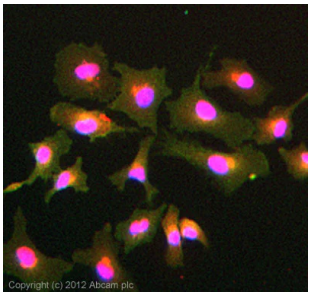
We do not recommend this combination. It is not covered by our product promise.

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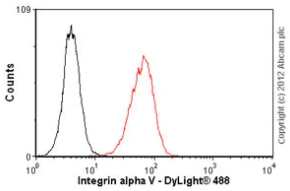
2 product images



Immunocytochemistry/ Immunofluorescence - Anti-Integrin alpha V antibody [P2W7] (ab11470)

Integrin alpha V Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Integrin alpha V antibody

ICC/IF image of ab11470 stained A549 cells. The cells were 4% formaldehyde fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab11470, 5µg/ml) overnight at +4°C. The secondary antibody (green) was ab96879, a goat anti-mouse DyLight® 488 (IgG; H+L) used at a 1/250 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.



Flow Cytometry - Anti-Integrin alpha V antibody [P2W7] (ab11470)

Integrin alpha V Flow Cytometry staining using mouse Anti-Integrin alpha V antibody

Overlay histogram showing A549 cells stained with ab11470 (red line). The cells were fixed with 80% methanol (5 min) and incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab11470, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was a Goat Anti-Mouse DyLight® 488 (IgG; H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive result in 4% paraformaldehyde (10 min) fixed A549 cells used under the same conditions.

Please note that Abcam do not have any data for use of this antibody on non-fixed cells. We welcome any customer feedback.

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