abcam

ab248077

Anti-Integrin alpha V antibody [EPR5583] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR5583
Purification technique	Affinity purification Protein A
Dissociation constant	3.2 x 10^{-12} M
Concentration	1.057 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Not recommended

Species	Mouse, Rat, Human

Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Expected

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

Predicted

Species	Mouse, Rat

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 conditions	+4°C

Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab248077 is the carrier-free version of ab124968.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

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

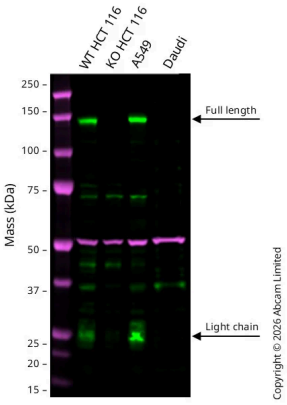
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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

Full details and terms and conditions can be found here:
Terms & Conditions.

2 product images



Western blot - Anti-Integrin alpha V antibody [EPR5583] - BSA and Azide free (ab248077)

Integrin alpha V Western blot staining using rabbit Anti-Integrin alpha V antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA and sodium azide (ab124968).

Western blot: Anti-Integrin alpha V antibody [EPR5583] ab124968 staining at 1/1000 dilution, shown in green; Mouse anti alpha Tubulin ab7291 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 25, 149 kDa in Wild-type HCT 116 cell line with no signal observed at this size in ITGAV knockout HCT 116 cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5% Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-Integrin alpha V antibody [EPR5583] (ab124968) at 1/1000 dilution

Lane 1:
Wild-type HCT 116 cell lysates at 20 µg

Lane 2:
Western blot - Human ITGAV knockout HCT116 cell line (ab286702) at 20 µg

Lane 3:
A549 cell lysates at 20 µg

Lane 4:
Daudi cell lysates at 20 µg

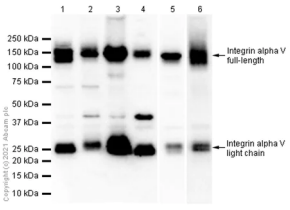
Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 116 kDa

Observed band size: 25 kDa, 149 kDa



Western blot - Anti-Integrin alpha V antibody [EPR5583] - BSA and Azide free (ab248077)

Integrin alpha V Western blot staining using rabbit Anti-Integrin alpha V antibody

This data was developed using ab124968, the same antibody clone in a different buffer formulation.

The bands detected are consistent with what have been described in the literatures (PMID: 11741954, 27033701). Full-length Integrin alpha V: 150kDa; Integrin alpha V light chain: 27-30kDa

All lanes:

Western blot - Anti-Integrin alpha V antibody [EPR5583] (ab124968) at 1/1000 dilution

Lane 1:
A549 (Human lung carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
A431 (Human epidermoid carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
HUVEC (Human umbilical vein endothelial cell) whole cell lysate at 20 µg

Lane 4:
U-87 MG (Human glioblastoma-astrocytoma epithelial cell) whole cell lysate at 20 µg

Lane 5:
NIH/3T3 (Mouse embryonic fibroblast) whole cell lysate at 20 µg

Lane 6:
C6 (Rat glial tumor glial cell) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 116 kDa

Observed band size: 150 kDa, 27-30 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.