abcam

ab239991

Anti-Integrin beta 3 antibody [EPR2342] - BSA and Azide free

Recombinant | RabMAb

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	EPR2342
Purification technique	Affinity purification Protein A
Concentration	1.018 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	-

Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information ITGB3

Function

Integrin alpha-V/beta-3 (ITGAV:ITGB3) is a receptor for cytotactin, fibronectin, laminin, matrix metalloproteinase-2, osteopontin, osteomodulin, prothrombin, thrombospondin, vitronectin and von Willebrand factor. Integrin alpha-IIb/beta-3 (ITGA2B:ITGB3) is a receptor for fibronectin, fibrinogen, plasminogen, prothrombin, thrombospondin and vitronectin. Integrins alpha-IIb/beta-3 and alpha-V/beta-3 recognize the sequence R-G-D in a wide array of ligands. Integrin alpha-IIb/beta-3 recognizes the sequence H-H-L-G-G-G-A-K-Q-A-G-D-V in fibrinogen gamma chain (By similarity). Following activation integrin alpha-IIb/beta-3 brings about platelet/platelet interaction through binding of soluble fibrinogen (PubMed:9111081). This step leads to rapid platelet aggregation which physically plugs ruptured endothelial surface. Fibrinogen binding enhances SELP expression in activated platelets (By similarity). ITGAV:ITGB3 binds to fractalkine (CX3CL1) and acts as its coreceptor in CX3CR1-dependent fractalkine signaling (PubMed:23125415, PubMed:24789099). 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 acts as a receptor for fibrillin-1 (FBN1) and mediates R-G-D-dependent cell adhesion to FBN1 (PubMed:12807887). In brain, plays a role in synaptic transmission and plasticity. Involved in the regulation of the serotonin neurotransmission, is required to localize to specific compartments within the synapse the serotonin receptor SLC6A4 and for an appropriate reuptake of serotonin. Controls excitatory synaptic strength by regulating GRIA2-containing AMPAR endocytosis, which affects AMPAR abundance and composition (By similarity). ITGAV:ITGB3 act 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). Integrin ITGA2B:ITGB3 is also the receptor of the erythrocyte-specific ICAM4 ligand involved in heterotypic cell-cell adhesion between erythrocytes and activated platelets (PubMed:12477717). (Microbial infection) Integrin ITGAV:ITGB3 acts as a receptor for Herpes virus 8/HHV-8. (Microbial infection) Integrin ITGAV:ITGB3 acts as a receptor for Coxsackievirus A9. (Microbial infection) Acts as a receptor for Hantaan virus. (Microbial infection) Integrin ITGAV:ITGB3 acts as a receptor for Cytomegalovirus/HHV-5. (Microbial infection) Integrin ITGA5:ITGB3 acts as a receptor for Human metapneumovirus. (Microbial infection) Integrin ITGAV:ITGB3 acts aP05556s 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

ab239991 is the carrier-free version of ab119992.

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.

Supplementary info

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

Activity summary	Integrin beta 3 also known as ITGB3 beta 3 integrin or CD41/CD61 is a cell surface receptor that plays a role in cell adhesion and signal transduction. It is a member of the integrin family characterized by a heterodimer structure formed with an alpha subunit. This integrin has a molecular mass of approximately 88 kDa. Integrin beta 3 is expressed on platelets megakaryocytes and several other cell types such as endothelial cells and certain tumor cells.
Biological function summary	Integrins serve as the mechanical link between the extracellular matrix and the cytoskeleton. Beta 3 integrin forms a complex with different alpha subunits most notably alpha IIb to function as a receptor for fibrinogen fibronectin and vitronectin. This receptor complex is essential for platelet aggregation and normal hemostasis. Dysregulation can lead to altered cellular responses impacting processes like immune response and tumor progression.
Pathways	Integrin beta 3 participates in the signaling of outside-in and inside-out pathways that are fundamental in cellular dynamics. Of particular significance are the integrin-mediated signaling pathways and the TGF-beta signaling pathway which influence cellular proliferation and differentiation. Integrin beta 3 interacts with proteins such as talin and kindlin which are vital for activation and clustering of integrins during cell signaling processes.
Associated diseases and disorders	Altered expression or function of integrin beta 3 is associated with bleeding disorders like Glanzmann's thrombasthenia where platelet aggregation is impaired. Additionally it plays a role in the progression of certain cancers due to its involvement in cell migration and invasion. The interaction of integrin beta 3 with proteins such as VEGF and MMPs is significant in the context of tumor angiogenesis and metastasis.

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

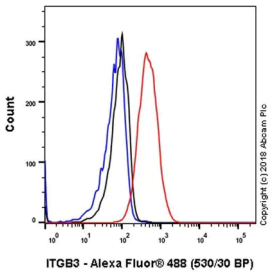
We do not recommend this combination. It is not covered by our product promise.

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.

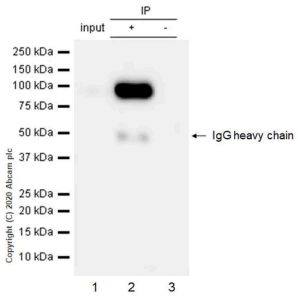
3 product images



Flow Cytometry (Intracellular) - Anti-Integrin beta 3 antibody [EPR2342] - BSA and Azide free (ab239991)

Integrin beta 3 Flow Cytometry (Intracellular) staining using rabbit Anti-Integrin beta 3 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized HUVEC (Human umbilical vein endothelial cell) cell line labeling Integrin beta 3 with ab119992 at 1/20 (red) compared with a Rabbit monoclonal IgG (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077), at 1/2000 dilution was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab119992).



Immunoprecipitation - Anti-Integrin beta 3 antibody [EPR2342] - BSA and Azide free (ab239991)

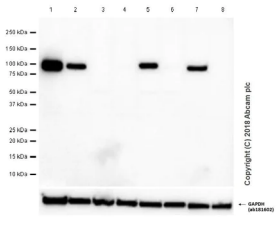
This data was developed using ab119992, the same antibody clone in a different buffer formulation.
Purified ab119992 at 1:20 dilution (0.7µg) immunoprecipitating Integrin beta 3 in HUVEC whole cell lysate.

Lane 1 (input): HUVEC (Human umbilical vein endothelial cell) whole cell lysate 10µg.
Lane 2 (+): ab119992 + HUVEC whole cell lysate.
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab119992 in HUVEC whole cell lysate.
VeriBlot for IP Detection Reagent (HRP)(ab131366) (1:1000 dilution) was used for Western blotting.

Blocking Buffer and concentration: 5% NFDM/TBST.
Diluting buffer and concentration: 5% NFDM/TBST.
Observed band size: 110 kDa

All lanes:
Immunoprecipitation - Anti-Integrin beta 3 antibody [EPR2342] (ab119992)

Predicted band size: 87 kDa



Western blot - Anti-Integrin beta 3 antibody [EPR2342] - BSA and Azide free (ab239991)

Blocking buffer and concentration: 5% NFDM/TBST. Diluting buffer and concentration: 5% NFDM/TBST. ab181602 was used as a loading control. LnCaP, HeLa and PC-3 are low expression cell lines (PMID: 21867506, PMID: 25248000). Though there are publications stating expression of Integrin beta 3 in RAW264.7, ab119992 and ab179473 show negative in Raw264.7. This data was developed using ab119992, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Integrin beta 3 antibody [EPR2342] (ab119992) at 1/1000 dilution

Lane 1:
U-87MG (Human glioblastoma-astrocytoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HEL (Human Erythroleukemia erythroblast) whole cell lysate at 20 µg

Lane 3:
LnCaP (Human prostate carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 4:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 5:
HUVEC (Human umbilical vein endothelial cell) whole cell lysate at 20 µg

Lane 6:
PC-3 (Human prostate adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 7:
C2C12 (Mouse myoblasts myoblast) whole cell lysate at 20 µg

Lane 8:
Raw264.7 (Mouse Abelson murine leukemia virus-induced tumor macrophage) 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: 87 kDa

Observed band size: 110 kDa

Exposure time: 40s

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