abcam

ab150361

Anti-Integrin alpha 5 antibody [EPR7854]

Anti-Integrin alpha 5 antibody [EPR7854] (ab150361) is a rabbit monoclonal antibody detecting Integrin alpha 5 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 80 publications

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR7854
Purification technique	Affinity purification Protein A
Concentration	0.22 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/400
Notes	**For unpurified use at 1/100 - 1/250.** Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/400
Notes	**For unpurified use at 1/100 - 1/250.** Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Human
Dilution info	1/400
Notes	**For unpurified use at 1/100 - 1/250.** Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

IP

Tested

Species	Human
Dilution info	1/10 - 1/100
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/10000

Notes	-

Species	Rat
Dilution info	1/1000 - 1/10000
Notes	-

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	**For unpurified use at 1/250 - 1/500.**

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. For unpurified use at 1/100 - 1/100.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.

Notes	-

Target data

See full target information ITGA5

Function	Integrin alpha-5/beta-1 (ITGA5:ITGB1) is a receptor for fibronectin and fibrinogen. It recognizes the sequence R-G-D in its ligands. ITGA5:ITGB1 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). ITGA5:ITGB1 acts as a receptor for fibrillin-1 (FBN1) and mediates R-G-D-dependent cell adhesion to FBN1 (PubMed:12807887, PubMed:17158881). ITGA5:ITGB1 acts as a receptor for fibronectin (FN1) and mediates R-G-D-dependent cell adhesion to FN1 (PubMed:33962943). ITGA5:ITGB1 is a receptor for IL1B and binding is essential for IL1B signaling (PubMed:29030430). ITGA5:ITGB3 is a receptor for soluble CD40LG and is required for CD40/CD40LG signaling (PubMed:31331973). (Microbial infection) Integrin ITGA5:ITGB1 acts as a receptor for Human metapneumovirus. (Microbial infection) Integrin ITGA2:ITGB1 acts as a receptor for Human parvovirus B19. (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	Conditional Ambient
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

Notes

Product Specifications

Anti-Integrin alpha 5 antibody [EPR7854] (ab150361) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt (Intra), ICC/IF, IHC-P, IP, WB in human, mouse, rat samples. Anti-Integrin alpha 5 antibody [EPR7854] (ab150361) specifically detects Integrin alpha 5 (UniProt ID: P08648; Molecular weight: 110kDa) and is sold in 100 µL and 1 mL selling sizes.

Quality and Validation

Abcam's high quality manufacturing and validation processes ensure Anti-Integrin alpha 5 antibody [EPR7854] (ab150361) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.
The specificity of Anti-Integrin alpha 5 antibody [EPR7854] (ab150361) has been confirmed by testing in knockout samples.
Anti-Integrin alpha 5 antibody [EPR7854] (ab150361) has been cited over 82 times in peer reviewed journals and is trusted by the scientific community.
Anti-Integrin alpha 5 antibody [EPR7854] (ab150361) has 12 independent reviews from customers.

Related Products

Conjugation-ready, carrier free format available for antibody clone EPR7854 - ab239400.
Antibody clone EPR7854 is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 594, APC (ab207269, ab221283).

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 alpha 5 also known as CD49e or ITGA5 is a subunit of the integrin family that forms heterodimers with beta 1 integrin. It has an approximate mass of 130 kDa. This protein mainly expresses in various tissues including fibroblasts endothelial cells and certain epithelial cells. Integrin alpha 5 mediates cell adhesion by binding to fibronectin an important extracellular matrix protein helping cells stay attached to their surrounding environment.
Biological function summary	Integrin alpha 5 plays a significant role in cellular processes such as migration proliferation and differentiation. It pairs with beta 1 integrin to form the alpha 5 beta 1 integrin complex. This complex facilitates the transmission of mechanical and chemical signals between the extracellular matrix and the cell interior. Integrin alpha 5 also interacts with intracellular proteins like talin and kindlin which are essential for initiating and strengthening the linkage to the actin cytoskeleton.
Pathways	Integrin alpha 5 is involved in the regulation of several critical signaling pathways. It prominently features within the MAPK/ERK pathway and the focal adhesion signaling pathway. Through these pathways integrin alpha 5 influences cell survival proliferation and migration. It interacts with proteins such as paxillin and focal adhesion kinase (FAK) within these pathways contributing to cellular responses to external stimuli.

Associated diseases and disorders	Integrin alpha 5 is linked to conditions such as cancer and fibrosis. Overexpression or aberrant regulation of this integrin often associates with tumorigenesis particularly in breast and colorectal cancers enhancing cancer cell migration and invasion. Integrin alpha 5 is also connected to proteins like matrix metalloproteinases (MMPs) which play roles in extracellular matrix remodeling and are involved in fibrotic diseases. These associations highlight the importance of integrin alpha 5 in pathological processes and its potential as a target for therapeutic intervention.

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

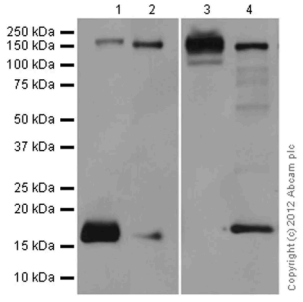
We do not recommend this combination. It is not covered by our product promise.

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.

18 product images



Western blot - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Observed band size : 19, 150 kDa
Exposure time : Lane 1-2: 1 minutes, Lane 3-4: 3 minutes

Blocking/Diluting buffer 5% NFDM/TBST

All lanes:
Western blot - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361) at 1/2000 dilution

Lane 1:
Human bladder tissue lysate at 10 µg

Lane 2:
HT-1080 (Human urinary bladder carcinoma cell line) whole cell lysates at 10 µg

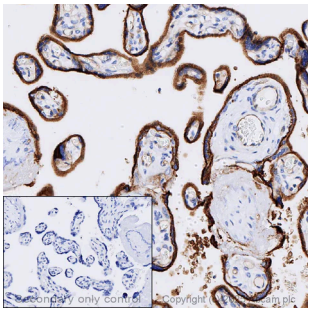
Lane 3:
HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysates at 10 µg

Lane 4:
U937 (Human histiocytic lymphoma cell line) whole cell lysates at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

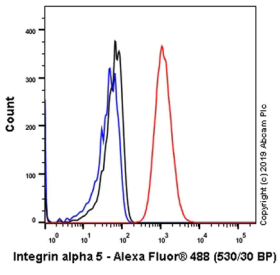
Predicted band size: 115 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Integrin alpha 5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human placenta using rabbit Anti-Integrin alpha 5 antibody

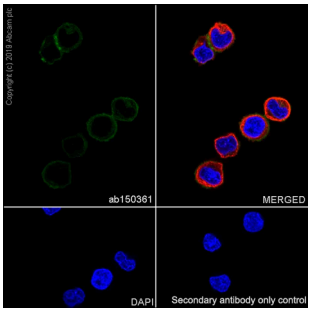
Immunohistochemical analysis of formalin fixed paraffin embedded human placenta labelling Integrin alpha 5 with ab150361 at a concentration of 0.1µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was performed with DISCOVERY cell conditioning solution (CC1) 100°C, pH8.5 for 32mins. ab150361 anti-Integrin alpha 5 antibody [EPR7854] was incubated for 16mins at 37°C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.
Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual).



Flow Cytometry (Intracellular) - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Integrin alpha 5 Flow Cytometry (Intracellular) staining using rabbit Anti-Integrin alpha 5 antibody

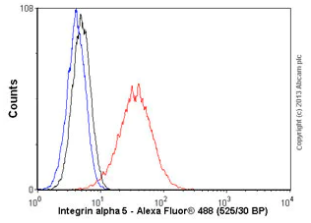
Intracellular Flow Cytometry analysis of HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling Integrin alpha 5 with purified ab150361 at 1/20 dilution (10µg/ml) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunocytochemistry/ Immunofluorescence - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Integrin alpha 5 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Integrin alpha 5 antibody

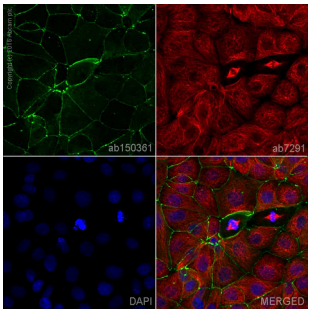
Immunocytochemistry/ Immunofluorescence analysis of U937 (Human histiocytic lymphoma monocyte) cells labeling Integrin alpha 5 with purified ab150361 at 1:50 dilution (4.3 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Flow Cytometry (Intracellular) - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Integrin alpha 5 Flow Cytometry (Intracellular) staining using rabbit Anti-Integrin alpha 5 antibody

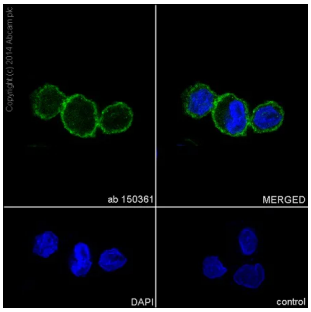
Overlay histogram showing HeLa cells stained with unpurifiedab150361 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab150361, 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was goat anti-rabbit Alexa Fluor 488 IgG (H&L) (ab150077) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in HeLa cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.



Immunocytochemistry/ Immunofluorescence - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Integrin alpha 5 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Integrin alpha 5 antibody

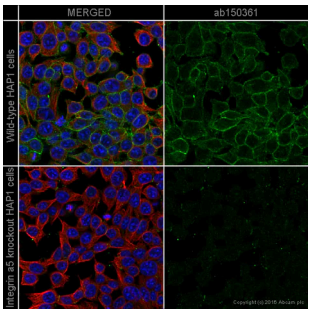
ab150361 staining Integrin alpha 5 in MCF7 (Human breast adenocarcinoma cell line) cells. The cells were fixed with 100% methanol (5min), permeabilized with 0.1% Tween for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with unpurified ab150361 at 1µg/ml concentration and ab7291 at 1µg/ml concentration overnight at +4°C, followed by a further incubation at room temperature for 1h with a goat secondary antibody to Rabbit IgG (Alexa Fluor® 488) (ab150081) at 2 µg/ml (shown in green) and a goat secondary antibody to Mouse IgG (Alexa Fluor® 594) (ab150120) at 2 µg/ml (showed in pseudocolour red) . Nuclear DNA was labelled in blue with DAPI.



Immunocytochemistry/ Immunofluorescence - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Integrin alpha 5 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Integrin alpha 5 antibody

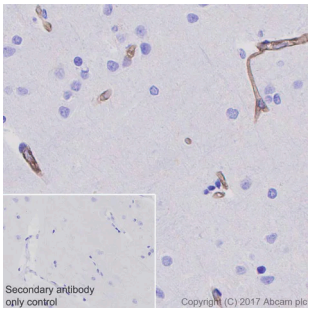
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized U937 (Human histiocytic lymphoma cell line) cells labeling Integrin alpha 5 with unpurified ab150361 at 1/500 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor 488) (ab150077) secondary antibody at 1/400 dilution (green). Confocal image showing mainly membrane staining on U937 cell line. The nuclear counterstain is DAPI (blue).



Immunocytochemistry/ Immunofluorescence - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Integrin alpha 5 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Integrin alpha 5 antibody

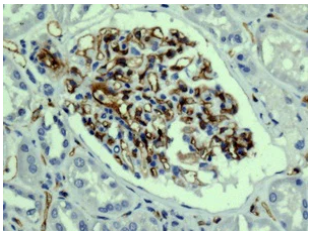
unpurified ab150361 staining Integrin alpha 5 in wild-type HAP1 cells (top panel) and ITGA5 knockout HAP1 cells (bottom panel). The cells were fixed with 100% methanol (5min), permeabilized with 0.1% Tween for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab150361 at 1/250 dilution and ab7291 at 1µg/ml concentration overnight at +4°C, followed by a further incubation at room temperature for 1h with a goat secondary antibody to Rabbit IgG (Alexa Fluor® 488) (ab150081) at 2 µg/ml (shown in green) and a goat secondary antibody to Mouse IgG (Alexa Fluor® 594) (ab150120) at 2 µg/ml (showed in pseudocolour red) . Nuclear DNA was labelled in blue with DAPI.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Integrin alpha 5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Integrin alpha 5 antibody

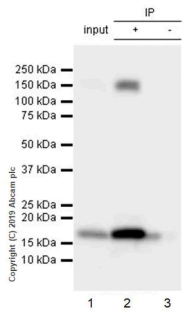
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human cerebral cortex tissue sections labeling Integrin alpha 5 with purified ab150361 at 1:400 dilution (0.54 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Integrin alpha 5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Integrin alpha 5 antibody

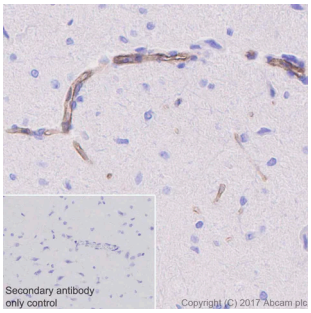
Immunohistochemical analysis of paraffin embedded Human kidney tissue labelling Integrin alpha 5 with unpurified ab150361 antibody at a dilution of 1/100.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunoprecipitation - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

ab150361 (Purified) at 1:20 dilution (1 µg) immunoprecipitating Integrin alpha 5 in HeLa whole cell lysate.
Lane 1 (input): HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate 10 µg
Lane 2 (+): ab150361 & HeLa whole cell lysate
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab150361 in HeLa whole cell lysate
For western blotting, VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1:5000 dilution.
Blocking and diluting buffer: 5% NFDM/TBST.
All lanes:
Immunoprecipitation - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

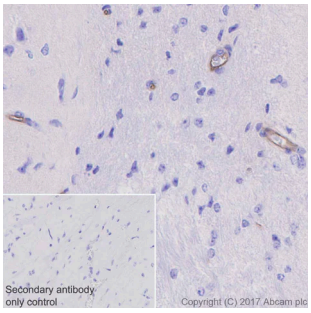
Predicted band size: 115 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Integrin alpha 5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Integrin alpha 5 antibody

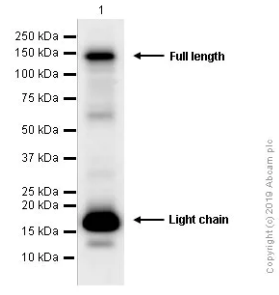
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat cerebral cortex tissue sections labeling Integrin alpha 5 with purified ab150361 at 1:400 dilution (0.54 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Integrin alpha 5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Integrin alpha 5 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse cerebral cortex tissue sections labeling Integrin alpha 5 with purified ab150361 at 1:400 dilution (0.54 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Western blot - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Integrin alpha 5 Western blot staining of HT-1080 (Human fibrosarcoma cell line) whole cell lysates using rabbit Anti-Integrin alpha 5 antibody

The bands detected by ab150361 are consistent with what have been described in PMID: 22740495.
Full length: 150kDa; Light chain: 19kDa
All lanes:
Western blot - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361) at 1/10000 dilution

All lanes:

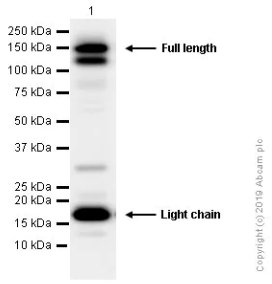
HT-1080 (Human fibrosarcoma cell line) whole cell lysates at 15 µg

Secondary

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

Predicted band size: 115 kDa

Observed band size: 150 kDa, 19 kDa



Western blot - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

The bands detected by ab150361 are consistent with what have been described in PMID: 22740495.
Full length: 150kDa; Light chain: 19kDa
Lane 1:
Western blot - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361) at 1/1000 dilution

Lane 1:
Western blot - Anti-Integrin alpha 5 antibody [EPR7854] - Low endotoxin, Azide free (ab221606)

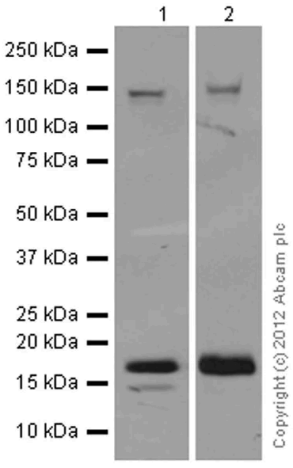
All lanes:
U937 (Human histiocytic lymphoma cell line) whole cell lysates at 15 µg

Secondary

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

Predicted band size: 115 kDa

Observed band size: 150 kDa, 19 kDa



Western blot - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Observed band size : 19, 150 kDa
Exposure time : 3 minutes

Blocking/Diluting buffer 5% NFDM/TBST

All lanes:
Western blot - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361) at 1/2000 dilution

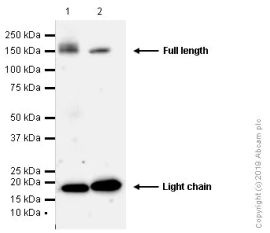
Lane 1:
Mouse heart tissue lysate at 10 µg

Lane 2:
Rat heart tissue lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 115 kDa



Western blot - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

The bands detected by ab150361 are consistent with what have been described in PMID: 22740495.
Full length: 150kDa; Light chain: 19kDa
All lanes:
Western blot - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361) at 1/1000 dilution

Lane 1:
Rat1 (Rat fibroblast cell line) whole cell lysates at 20 µg

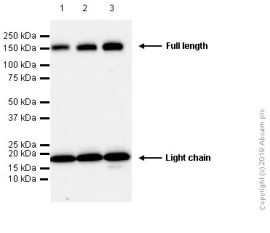
Lane 2:
Rat liver lysates at 20 µg

Secondary

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

Predicted band size: 115 kDa

Observed band size: 150 kDa, 19 kDa



Western blot - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361)

Integrin alpha 5 Western blot staining using rabbit Anti-Integrin alpha 5 antibody

The bands detected by ab150361 are consistent with what have been described in PMID: 22740495.
Full length: 150kDa; Light chain: 19kDa
All lanes:
Western blot - Anti-Integrin alpha 5 antibody [EPR7854] (ab150361) at 1/1000 dilution

Lane 1:
NIH/3T3 (Mouse embryo fibroblast cell line) whole cell lysates at 20 µg

Lane 2:
MEF (Mouse embryonic fibroblast cell line) whole cell lysates at 20 µg

Lane 3:
C2C12 (Mouse myoblast cell line) whole cell lysates at 20 µg

Secondary

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

Predicted band size: 115 kDa

Observed band size: 150 kDa, 19 kDa

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