

Anti-Integrin beta 1 antibody [EPR16895] - Low endotoxin, Azide free ab221776

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Recombinant

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11 Images

Overview

Product name	Anti-Integrin beta 1 antibody [EPR16895] - Low endotoxin, Azide free
Description	Rabbit monoclonal [EPR16895] to Integrin beta 1 - Low endotoxin, Azide free
Host species	Rabbit
Tested applications	Suitable for: IHC-P, WB
Species reactivity	Reacts with: Mouse, Rat, Human
Immunogen	Recombinant fragment. This information is proprietary to Abcam and/or its suppliers.
Positive control	WB: A431 and U-87 MG whole cell lysates; Human spleen lysate; Mouse heart and kidney; and Rat heart, kidney and spleen lysates. IHC-P: Human colon, Human hepatocellular carcinoma, rat stomach and mouse kidney tissues.
General notes	<p>ab221776 is the carrier-free version of ab179471.</p> <p>Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. The carrier-free buffer and high concentration allow for increased conjugation efficiency.</p> <p>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.</p> <p>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.</p> <p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none"> - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production <p>For more information see here.</p> <p>Our RabMAb[®] technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb[®] patents.</p> <p>Our Low endotoxin, azide-free formats have low endotoxin level (≤ 1 EU/ml, determined by the LAL assay) and are free from azide, to achieve consistent experimental results in functional</p>

assays.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C. Do Not Freeze.
Storage buffer	pH: 7.2 Constituent: PBS
Carrier free	Yes
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR16895
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab221776 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P		Use at an assay dependent concentration. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
WB		Use at an assay dependent concentration.

Target

Function Integrins alpha-1/beta-1, alpha-2/beta-1, alpha-10/beta-1 and alpha-11/beta-1 are receptors for collagen. Integrins alpha-1/beta-1 and alpha-2/beta-2 recognize the proline-hydroxylated sequence G-F-P-G-E-R in collagen. Integrins alpha-2/beta-1, alpha-3/beta-1, alpha-4/beta-1, alpha-5/beta-1, alpha-8/beta-1, alpha-10/beta-1, alpha-11/beta-1 and alpha-V/beta-1 are receptors for fibronectin. Alpha-4/beta-1 recognizes one or more domains within the alternatively spliced CS-1 and CS-5 regions of fibronectin. Integrin alpha-5/beta-1 is a receptor for fibrinogen. Integrin alpha-1/beta-1, alpha-2/beta-1, alpha-6/beta-1 and alpha-7/beta-1 are receptors for laminin. Integrin alpha-4/beta-1 is a receptor for VCAM1. It recognizes the sequence Q-I-D-S in VCAM1. Integrin alpha-9/beta-1 is a receptor for VCAM1, cytotactin and osteopontin. It recognizes the sequence A-E-I-D-G-I-E-L in cytotactin. Integrin alpha-3/beta-1 is a receptor for epiligrin, thrombospondin and CSPG4. Alpha-3/beta-1 may mediate with LGALS3 the stimulation by CSPG4 of endothelial cells migration. Integrin alpha-V/beta-1 is a receptor for vitronectin. Beta-1 integrins recognize the sequence R-G-D in a wide array of ligands. Isoform 2 interferes with isoform 1 resulting in a dominant negative effect on cell adhesion and migration (in vitro). When associated with alpha-7/beta-1 integrin, regulates cell adhesion and laminin matrix deposition. Involved in promoting endothelial cell motility and angiogenesis. Involved in osteoblast compaction through the fibronectin fibrillogenesis cell-mediated matrix assembly process and the

formation of mineralized bone nodules. May be involved in up-regulation of the activity of kinases such as PKC via binding to KRT1. Together with KRT1 and RACK1, serves as a platform for SRC activation or inactivation. Plays a mechanistic adhesive role during telophase, required for the successful completion of cytokinesis. Integrin alpha-3/beta-1 provides a docking site for FAP (seprase) at invadopodia plasma membranes in a collagen-dependent manner and hence may participate in the adhesion, formation of invadopodia and matrix degradation processes, promoting cell invasion. ITGA4:ITGB1 binds to fractalkine (CX3CL1) and may act as its coreceptor in CX3CR1-dependent fractalkine signaling (PubMed:23125415, PubMed:24789099). ITGA4:ITGB1 and ITGA5:ITGB1 bind 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).

Isoform 5: Isoform 5 displaces isoform 1 in striated muscles.

(Microbial infection) Integrin ITGA2:ITGB1 acts as a receptor for human echoviruses 1 and 8 (PubMed:8411387). Acts as a receptor for cytomegalovirus/HHV-5 (PubMed:20660204). Acts as a receptor for Epstein-Barr virus/HHV-4 (PubMed:17945327). Integrin ITGA5:ITGB1 acts as a receptor for human parvovirus B19 (PubMed:12907437). Integrin ITGA2:ITGB1 acts as a receptor for human rotavirus (PubMed:12941907). Acts as a receptor for mammalian reovirus (PubMed:16501085). In case of HIV-1 infection, integrin ITGA5:ITGB1 binding to extracellular viral Tat protein seems to enhance angiogenesis in Kaposi's sarcoma lesions (PubMed:10397733).

Tissue specificity

Isoform 1 is widely expressed, other isoforms are generally coexpressed with a more restricted distribution. Isoform 2 is expressed in skin, liver, skeletal muscle, cardiac muscle, placenta, umbilical vein endothelial cells, neuroblastoma cells, lymphoma cells, hepatoma cells and astrocytoma cells. Isoform 3 and isoform 4 are expressed in muscle, kidney, liver, placenta, cervical epithelium, umbilical vein endothelial cells, fibroblast cells, embryonal kidney cells, platelets and several blood cell lines. Isoform 4, rather than isoform 3, is selectively expressed in peripheral T-cells. Isoform 3 is expressed in non-proliferating and differentiated prostate gland epithelial cells and in platelets, on the surface of erythroleukemia cells and in various hematopoietic cell lines. Isoform 5 is expressed specifically in striated muscle (skeletal and cardiac muscle).

Sequence similarities

Belongs to the integrin beta chain family.
Contains 1 VWFA domain.

Post-translational modifications

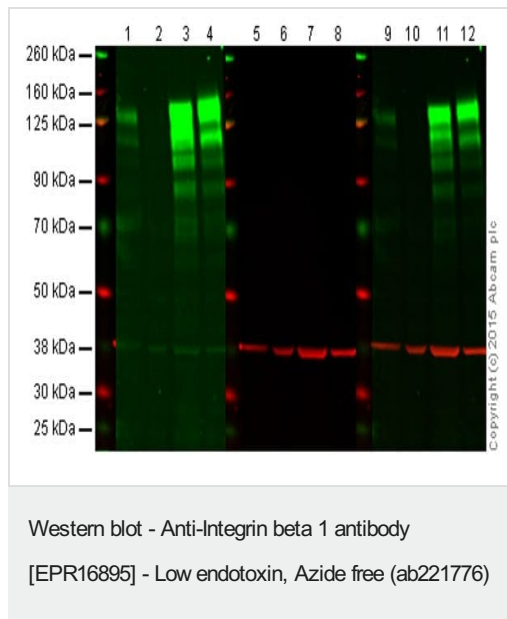
The cysteine residues are involved in intrachain disulfide bonds.

Cellular localization

Cell membrane, sarcolemma. Cell junction. In cardiac muscle, isoform 5 is found in costameres and intercalated disks and Cell membrane. Cell projection, invadopodium membrane. Cell projection, ruffle membrane. Recycling endosome. Melanosome. Cleavage furrow. Cell projection, lamellipodium. Cell projection, ruffle. Cell junction, focal adhesion. Cell surface. Isoform 2 does not localize to focal adhesions. Highly enriched in stage I melanosomes. Located on plasma membrane of neuroblastoma NMB7 cells. In a lung cancer cell line, in prometaphase and metaphase, localizes diffusely at the membrane and in a few intracellular vesicles. In early telophase, detected mainly on the matrix-facing side of the cells. By mid-telophase, concentrated to the ingressing cleavage furrow, mainly to the basal side of the furrow. In late telophase, concentrated to the extending protrusions formed at the opposite ends of the spreading daughter cells, in vesicles at the base of the lamellipodia formed by the separating daughter cells. Colocalizes with ITGB1BP1 and metastatic suppressor protein NME2 at the edge or peripheral ruffles and lamellipodia during the early stages of cell spreading on fibronectin or collagen. Translocates from peripheral focal adhesions sites to fibrillar adhesions in a ITGB1BP1-dependent manner. Enriched preferentially at invadopodia, cell membrane protrusions that

correspond to sites of cell invasion, in a collagen-dependent manner. Localized at plasma and ruffle membranes in a collagen-independent manner.

Images



This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab179471](#)).

Lanes 1, 5 and 9: Wild-type HAP1 cell lysate (20 µg)

Lanes 2, 6 and 10: Integrin beta 1 knockout HAP1 cell lysate (20 µg)

Lanes 3, 7 and 11: U87-MG cell lysate (20 µg)

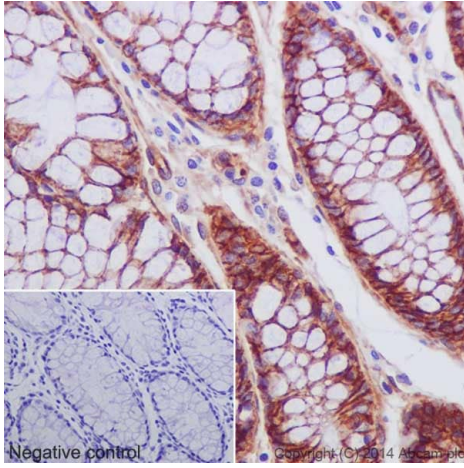
Lanes 4, 8 and 12: A431 cell lysate (20 µg)

Lanes 1, 2, 3 and 4: Green signal from target – [ab179471](#) observed at 140 kDa

Lanes 5, 6, 7 and 8: Red signal from loading control – [ab8245](#) observed at 37 kDa

Lanes 9, 10, 11 and 12: Merged (red and green) signal

[ab179471](#) was shown to react with Integrin beta 1 in wild-type HAP1 cells as well as additional cross-reactive bands. No bands were observed when Integrin beta 1 knockout samples were examined. Wild-type and Integrin beta 1 knockout samples were subjected to SDS-PAGE. [ab179471](#) and [ab8245](#) (loading control to GAPDH) were diluted 1/10,000 and 1/2000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed ([ab216773](#)) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed ([ab216776](#)) secondary antibodies at 1/10,000 dilution for 1hr at room temperature before imaging.



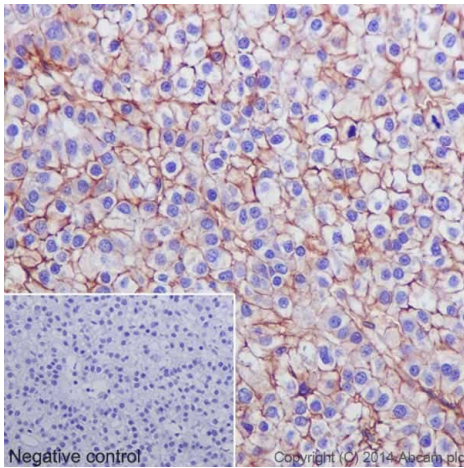
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Integrin beta 1 antibody [EPR16895] - Low endotoxin, Azide free (ab221776)

Immunohistochemical analysis of paraffin-embedded Human colon tissue labeling Integrin beta 1 with **ab179471** at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) secondary antibody at 1/500 dilution. Membrane staining on epithelial cells of Human colon is observed. Counter stained with Hematoxylin.

Negative control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab179471**).

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



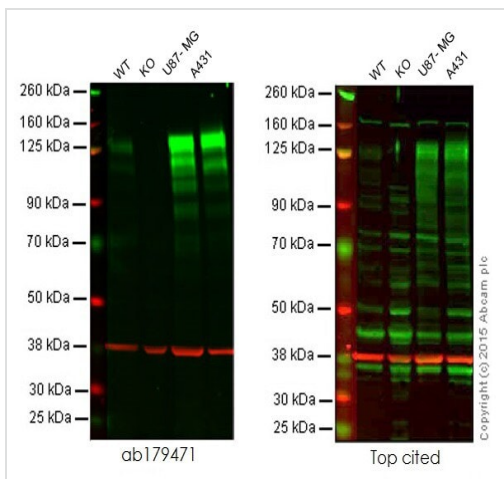
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Integrin beta 1 antibody [EPR16895] - Low endotoxin, Azide free (ab221776)

Immunohistochemical analysis of paraffin-embedded Human hepatocellular carcinoma tissue labeling Integrin beta 1 with **ab179471** at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) secondary antibody at 1/500 dilution. Membrane staining on tumor cells of Human hepatocellular carcinoma is observed. Counter stained with Hematoxylin.

Negative control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab179471**).

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-Integrin beta 1 antibody
[EPR16895] - Low endotoxin, Azide free (ab221776)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab179471**).

Lane 1: Wild-type HAP1 cell lysate (20 µg)

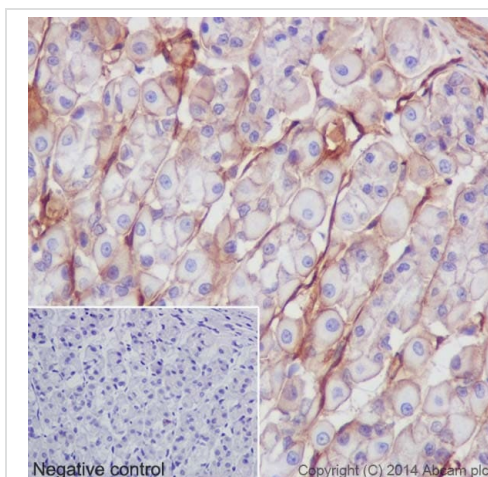
Lane 2: Integrin beta 1 knockout HAP1 cell lysate (20 µg)

Lane 3: U87-MG cell lysate (20 µg)

Lane 4: A431 cell lysate (20 µg)

Lanes 1 - 4: Merged signal (red and green). Green - **ab179471** observed at 140 kDa. Red signal from loading control – **ab8245** observed at 37 kDa.

This western blot image is a comparison between **ab179471** and a competitor's top cited rabbit polyclonal antibody.



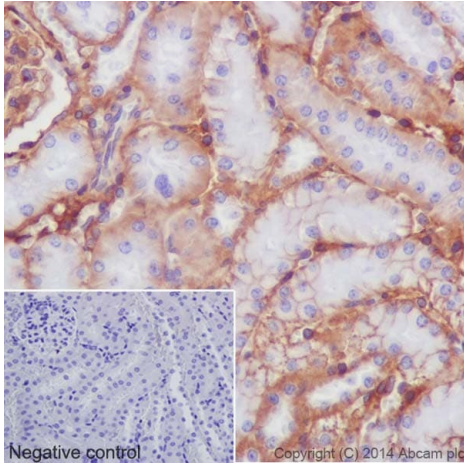
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Integrin beta 1 antibody
[EPR16895] - Low endotoxin, Azide free (ab221776)

Immunohistochemical analysis of paraffin-embedded Rat stomach tissue labeling Integrin beta 1 with **ab179471** at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) secondary antibody at 1/500 dilution. Membrane staining on epithelial cells of rat stomach is observed. Counter stained with Hematoxylin.

Negative control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab179471**).

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



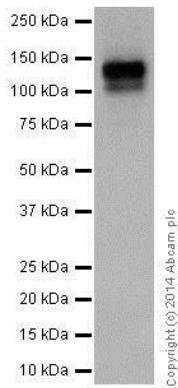
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Integrin beta 1 antibody [EPR16895] - Low endotoxin, Azide free (ab221776)

Immunohistochemical analysis of paraffin-embedded Mouse kidney tissue labeling Integrin beta 1 with **ab179471** at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) secondary antibody at 1/500 dilution. Membrane and cytoplasmic staining on mouse kidney is observed. Counter stained with Hematoxylin.

Negative control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab179471**).

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-Integrin beta 1 antibody [EPR16895] - Low endotoxin, Azide free (ab221776)

Anti-Integrin beta 1 antibody [EPR16895] (**ab179471**) at 1/20000 dilution + A431 (Human epidermoid carcinoma) whole cell lysates at 10 µg

Secondary

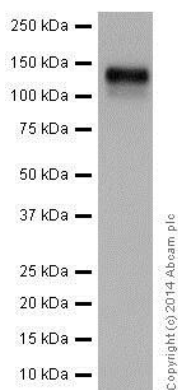
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Observed band size: 130-150 kDa

Exposure time: 1 minute

Blocking/Dilution buffer: 5% NFDM/TBST.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab179471**).



Western blot - Anti-Integrin beta 1 antibody
[EPR16895] - Low endotoxin, Azide free (ab221776)

Anti-Integrin beta 1 antibody [EPR16895] ([ab179471](#)) at 1/20000 dilution + U-87 MG (Human glioblastoma-astrocytoma epithelial cell line) whole cell lysates at 10 µg

Secondary

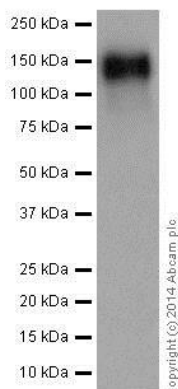
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Observed band size: 130-150 kDa

Exposure time: 1 minute

Blocking/Dilution buffer: 5% NFDm/TBST.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab179471](#)).



Western blot - Anti-Integrin beta 1 antibody
[EPR16895] - Low endotoxin, Azide free (ab221776)

Anti-Integrin beta 1 antibody [EPR16895] ([ab179471](#)) at 1/2000 dilution + Human spleen lysates at 10 µg

Secondary

Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

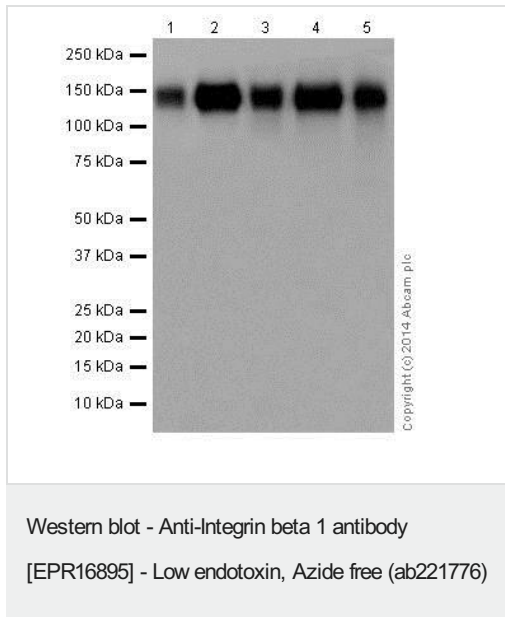
Observed band size: 130-150 kDa

Exposure time: 1 minute

Blocking/Dilution buffer: 5% NFDm/TBST.

This data was developed using the same antibody clone in a

different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab179471](#)).



All lanes : Anti-Integrin beta 1 antibody [EPR16895] ([ab179471](#)) at 1/2000 dilution

Lane 1 : Mouse heart lysates

Lane 2 : Mouse kidney lysates

Lane 3 : Rat heart lysates

Lane 4 : Rat kidney lysates

Lane 5 : Rat spleen lysates

Lysates/proteins at 10 µg per lane.

Secondary

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

Observed band size: 130-150 kDa

Exposure time: 1 minute

Blocking/Dilution buffer: 5% NFDM/TBST.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab179471](#)).

Why choose a recombinant antibody?



Research with confidence
Consistent and reproducible results



Long-term and scalable supply
Recombinant technology



Success from the first experiment
Confirmed specificity



Ethical standards compliant
Animal-free production

Anti-Integrin beta 1 antibody [EPR16895] - Low
endotoxin, Azide free (ab221776)

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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