abcam

ab219733

Anti-Actin antibody [EPR16769] - 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	EPR16769
Purification technique	Affinity purification Protein A
Concentration	1.036 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse, Rat
Dilution info	-

Notes	-

Expected

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

Predicted

Species	Chicken
Dilution info	-
Notes	-

WB

Expected

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

ICC/IF

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Chicken
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Chicken
Dilution info	-
Notes	-

IHC-P

Tested

Species	Rat
Dilution info	-
Notes	-

Species	Human
Dilution info	-

Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Expected

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

Predicted

Species	Chicken
Dilution info	-
Notes	-

Target data

See full target information ACTA1

Function	Actins are highly conserved proteins that are involved in various types of cell motility and are ubiquitously expressed in all eukaryotic cells.

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

ab219733 is the carrier-free version of ab179467.

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	Actin also known as globular (G-actin) or filamentous (F-actin) actin plays a central role in cell structure and movement. This protein has a molecular weight of approximately 42 kDa and resides abundantly in eukaryotic cells especially in muscle and cytoskeletal structures. It comes in several isoforms with varying expression profiles across tissues. Actin can undergo polymerization from its G-actin monomers into F-actin filaments a process that is reversible through depolymerization allowing for dynamic cellular functions.
Biological function summary	Actin contributes to various cellular processes by forming the cytoskeleton which provides mechanical support and determines cell shape. Actin also facilitates cell motility division and intracellular transport through rapid polymerization and depolymerization cycles. Within cells actin associates with other proteins to form complexes such as the Arp2/3 complex which assists actin in the branching of filaments critical for pushing forward the cell's leading edge during movement. Techniques like actin immunofluorescence help visualize actin filaments within cells revealing its extensive network.
Pathways	Actin plays an integral role in pathways like cell movement and signal transduction. The Rho family of GTPases regulates actin cytoskeleton rearrangements influencing cell shape and migration. Actin function interactions involve proteins like myosin forming actomyosin complexes essential for muscle contraction and other cell motility activities. Actin polymerization and depolymerization cycles are key to the dynamic regulation within these pathways ensuring adequate cellular responses to environmental signals.

Associated diseases and disorders	Mutations or misregulation of actin and its associated pathways link to conditions such as cardiomyopathies and cancer metastasis. In familial cardiomyopathy actin mutations disrupt normal cardiac muscle contraction. In cancer altered actin polymerization and depolymerization enable invasive cell migration facilitating metastasis. Proteins like myosin and tropomyosin associate with actin in these pathologies illustrating the impact of actin dynamics on disease progression and highlighting actin as a therapeutic target. Anti-actin antibodies can be used in research and diagnostics to better understand these disorders.

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

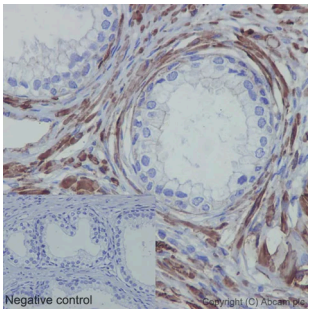
We do not recommend this combination. It is not covered by our product promise.

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.

10 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Actin antibody [EPR16769] - BSA and Azide free (ab219733)

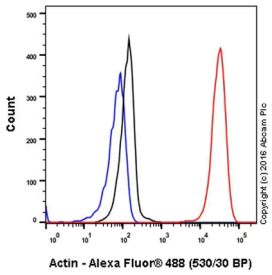
Actin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Actin antibody

Immunohistochemical analysis of paraffin-embedded Human prostate hyperplasia tissue labeling Actin with ab179467 at 1/1000 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Cytoplasm staining on smooth muscle cells is observed. Counter stained with Hematoxylin.

Negative control: Using PBS instead of primary ab, secondary ab is prediluted HRP Polymer for Rabbit/Mouse IgG.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179467).

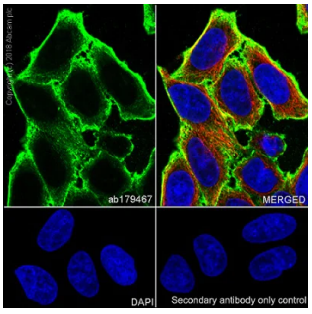
Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-Actin antibody [EPR16769] - BSA and Azide free (ab219733)

Actin Flow Cytometry (Intracellular) staining using rabbit Anti-Actin antibody

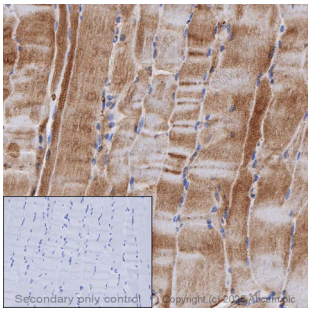
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labelling Actin with purified ab179467 at 1/70 (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. An Alexa Fluor®488-conjugated goat anti-rabbit IgG (1/2000) was used as the secondary antibody. Black - Isotype control, rabbit monoclonal IgG. Blue - Unlabelled control, cells without incubation with primary and secondary antibodies.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179467).



Immunocytochemistry/ Immunofluorescence - Anti-Actin antibody [EPR16769] - BSA and Azide free (ab219733)

Actin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Actin antibody

Immunocytochemistry/ Immunofluorescence analysis of HeLa (Human cervix adenocarcinoma epithelia cell) cells labeling Actin with Purified ab179467 at 1:100 dilution (6.98 µg/ml). Cells were fixed in 4% paraformaldehyde and permeabilized with 0.1% Triton X-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 dilution (2 µg/ml) dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179467).



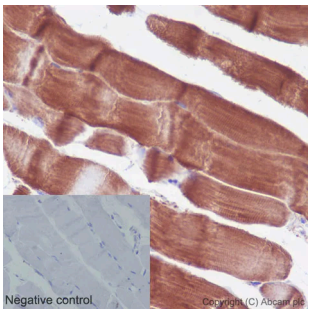
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Actin antibody [EPR16769] - BSA and Azide free (ab219733)

Actin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of human skeletal muscle using rabbit Anti-Actin antibody

This data was developed using ab179467, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of formalin fixed paraffin embedded human skeletal muscle labelling Actin with ab179467 at a concentration of 0.5µg/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. ab179467 anti-Actin antibody [EPR16769] 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).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Actin antibody [EPR16769] - BSA and Azide free (ab219733)

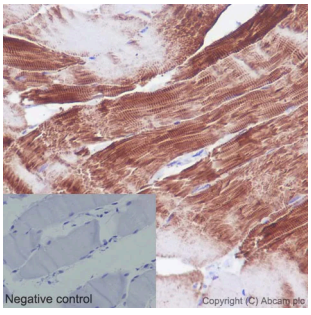
Actin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Actin antibody

Immunohistochemical analysis of paraffin-embedded Mouse skeletal muscle tissue labeling Actin with ab179467 at 1/1000 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Cytoplasm staining is observed. Counter stained with Hematoxylin.

Negative control: Using PBS instead of primary ab, secondary ab is prediluted HRP Polymer for Rabbit/Mouse IgG.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179467).

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



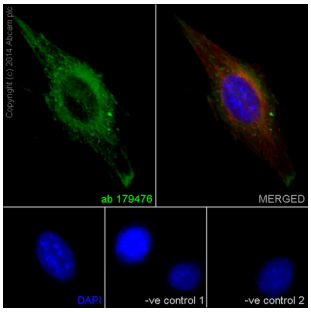
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Actin antibody [EPR16769] - BSA and Azide free (ab219733)

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

Immunohistochemical analysis of paraffin-embedded Rat skeletal muscle tissue labeling Actin with ab179467 at 1/1000 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Cytoplasm staining is observed. Counter stained with Hematoxylin.
Negative control: Using PBS instead of primary ab, secondary ab is prediluted HRP Polymer for Rabbit/Mouse IgG.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179467).

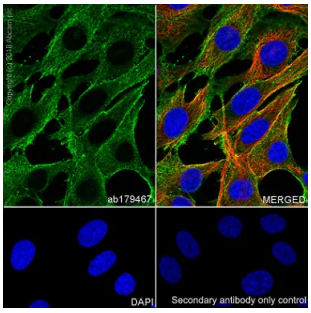
Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-Actin antibody [EPR16769] - BSA and Azide free (ab219733)

Actin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Actin antibody

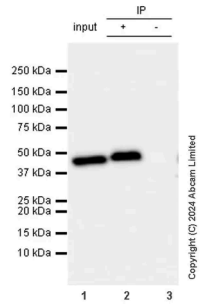
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized NIH/3T3 (Mouse embyro fibroblast cells) cells labeling Actin with ab179467 at 1/50 dilution, followed by Goat anti-rabbit Alexa Fluor® 488 (IgG) (ab150077) secondary antibody at 1/200 dilution (green). Cytoplasm staining on NIH/3T3 cell line is observed. The nuclear counter stain is DAPI (blue). Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/500 dilution and ab150120 (goat anti-mouse AlexaFluor®594 secondary) at 1/500 dilution (red).
The negative controls are as follows;
1. ab179467 at 1/50 dilution followed by ab150120 (goat anti-mouse AlexaFluor®594 secondary) at 1/500 dilution.
2. ab7291 (anti-Tubulin mouse mAb) at 1/500 dilution followed by ab150077 (goat anti-rabbit Alexa Fluor®488 (IgG H&L) at 1/200 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179467).



Immunocytochemistry/ Immunofluorescence - Anti-Actin antibody [EPR16769] - BSA and Azide free (ab219733)

Actin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Actin antibody

Immunocytochemistry/ Immunofluorescence analysis of NIH/3T3 (Mouse embryonic fibroblast) cells labeling Actin with Purified ab179467 at 1:100 dilution (6.98 µg/ml). Cells were fixed in 4% paraformaldehyde and permeabilized with 0.1% Triton X-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 dilution (2 µg/ml) dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179467).



Immunoprecipitation - Anti-Actin antibody [EPR16769] - BSA and Azide free (ab219733)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179467).
Actin was immunoprecipitated fromC6 (rat glial tumor glial cell) whole cell lysate with ab179467 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab179467 at 1/1000 dilution.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

All lanes:
Immunoprecipitation - Anti-Actin antibody [EPR16769] - Loading Control (ab179467) at 1/1000 dilution

Lane 1:
C6 (rat glial tumor glial cell) whole cell lysate (Input) at 10 µg

Lane 2:
C6 (rat glial tumor glial cell) whole cell lysate (+)

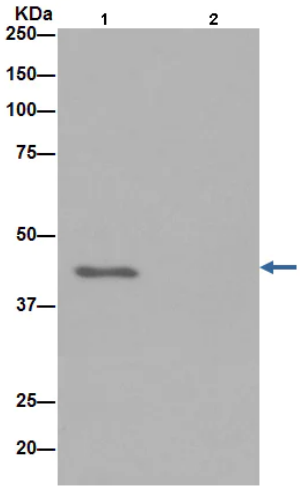
Lane 3:
Rabbit monoclonal IgG (ab172730) instead of ab179467 in C6 whole cell lysate (-)

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Observed band size: 42 kDa

Exposure time: 6s



Immunoprecipitation - Anti-Actin antibody [EPR16769] - BSA and Azide free (ab219733)

Actin was immunoprecipitated from 1mg of NIH/3T3 (Mouse embyro fibroblast cells) whole cell extract with ab179467 at 1/40 dilution. Western blot was performed from the immunoprecipitate using ab179467 at 1/1000 dilution. Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated was used as secondary antibody at 1/1000 dilution. Lane 1: NIH/3T3 whole cell extract. Lane 2: PBS instead of NIH/3T3 whole cell extract.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179467).

All lanes:
Immunoprecipitation - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

Predicted band size: 42 kDa

Observed band size: 42 kDa

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