abcam

ab179467

Anti-Actin antibody [EPR16769] - Loading Control

Anti-Actin antibody [EPR16769] (ab179467) is a rabbit monoclonal antibody detecting Actin in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Chicken, Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 420 publications

Lab Essentials | Recombinant | RabMAb | 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	EPR16769
Purification technique	Affinity purification Protein A
Concentration	0.695 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse

Dilution info	1/40
Notes	-

Species	Rat
Dilution info	1/30
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/5000
Notes	-

Species	Rat
Dilution info	1/5000
Notes	-

Species	Chicken
Dilution info	1/5000
Notes	-

Species	Human
Dilution info	1/5000
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Species	Human
Dilution info	1/50
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/70
Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/500 - 1/1000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/500 - 1/1000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human
Dilution info	0.5 µg/mL
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Expected

Species	Chicken
Dilution info	Use at an assay dependent concentration.
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	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
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

What is this antibody validated in?
Anti-Actin antibody [EPR16769] (ab179467) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Chicken, Human, Mouse, Rat samples.

What is the molecular weight of Actin?
Anti-Actin [EPR16769] (ab179467) specifically detects a band for Actin (UniProt: P68133) at a molecular weight of 42kDa.

Trusted by the scientific community
Anti-Actin [EPR16769] (ab179467) was first used in a scientific publication in 2014 and has been cited over 420 times in peer-reviewed journals.

Reviewed by scientists
Anti-Actin [EPR16769] (ab179467) has over 10 independent reviews from customers.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

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	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

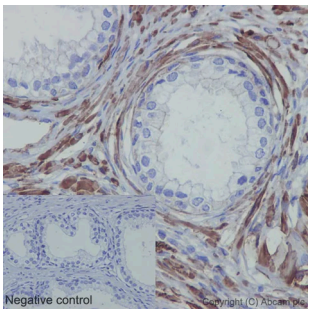
We do not recommend this combination. It is not covered by our product promise.

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.

16 product images

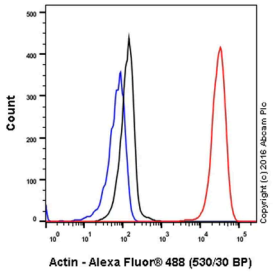


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

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.

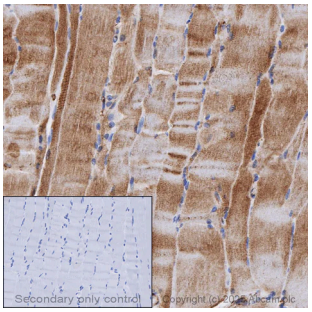
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

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

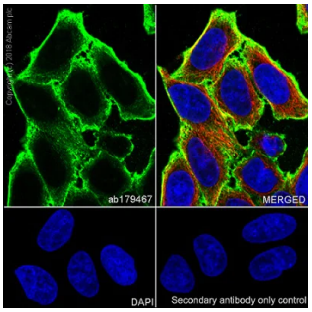
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labelling Actin with purified ab179467 at 1/70 (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. An Alexa Fluor®488-conjugated goat anti-rabbit IgG (1/2000) was used as the secondary antibody. Black - Isotype control, rabbit monoclonal IgG. Blue - Unlabelled control, cells without incubation with primary and secondary antibodies.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

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

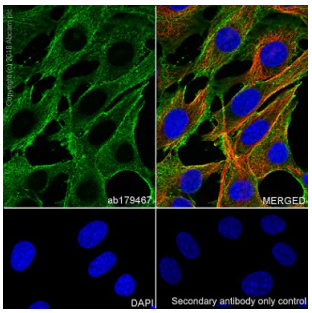
Immunohistochemical analysis of formalin fixed paraffin embedded human skeletal muscle labelling Actin with ab179467 at a concentration of 0.5µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. Heat mediated 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).



Immunocytochemistry/ Immunofluorescence - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

Actin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Actin antibody

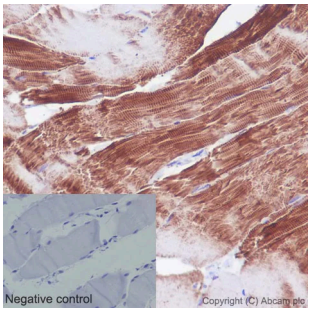
Immunocytochemistry/ Immunofluorescence analysis of HeLa (Human cervix adenocarcinoma epithelia cell) cells labeling Actin with Purified ab179467 at 1:100 dilution (6.98 µg/ml). Cells were fixed in 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. Cells were counterstained with ab195889 Anti-alpha 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.



Immunocytochemistry/ Immunofluorescence - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

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.

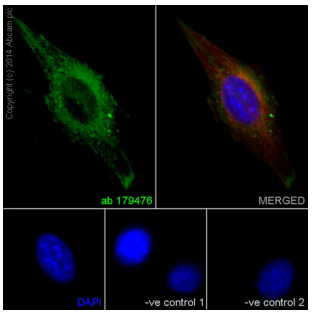


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

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.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

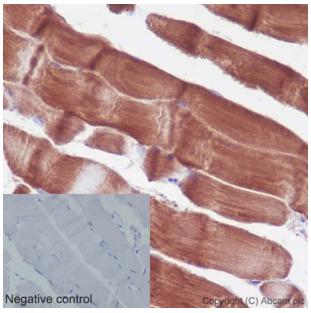


Immunocytochemistry/ Immunofluorescence - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

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 Alexa Fluor® 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 Alexa Fluor® 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.

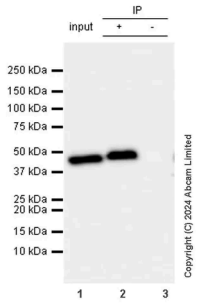


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

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.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunoprecipitation - Anti-Actin antibody [EPR16769] - Loading Control (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 (+)

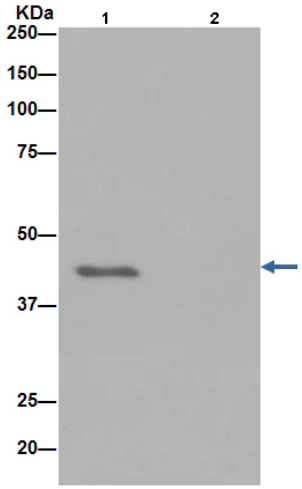
Lane 3:
Rabbit monoclonal IgG (ab172730) instead of ab179467 in C6 whole cell lysate (-)

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] - Loading Control (ab179467)

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.

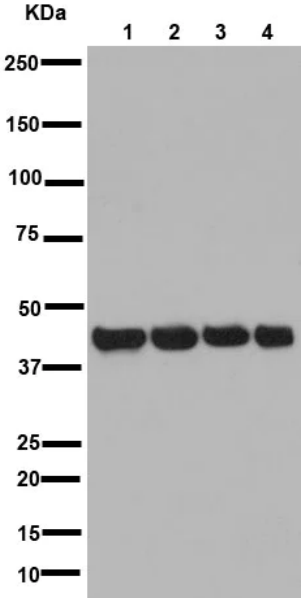
Lane 1: NIH/3T3 whole cell extract.
Lane 2: PBS instead of NIH/3T3 whole cell extract.

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

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

Predicted band size: 42 kDa

Observed band size: 42 kDa



Western blot - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

Actin Western blot staining using rabbit Anti-Actin antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-Actin antibody [EPR16769] - Loading Control (ab179467) at 1/5000 dilution

Lane 1:
Human fetal brain tissue lysate at 10 µg

Lane 2:
Human fetal heart tissue lysate at 10 µg

Lane 3:
Human fetal kidney tissue lysate at 10 µg

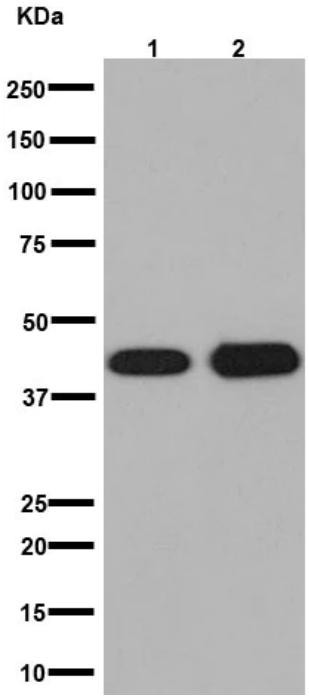
Lane 4:
Human fetal spleen tissue lysate at 10 µg

Secondary

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

Predicted band size: 42 kDa

Observed band size: 42 kDa



Western blot - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

Actin Western blot staining using rabbit Anti-Actin antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-Actin antibody [EPR16769] - Loading Control (ab179467) at 1/20000 dilution

Lane 1:
UMNSAH/DF-1 (Transformed chicken embryonic fibroblast cells) whole cell lysates) at 10 µg

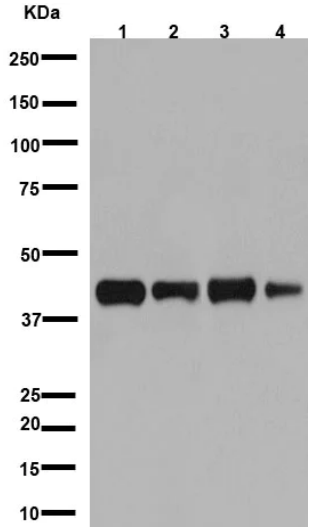
Lane 2:
Human cardiac muscle tissue lysate at 10 µg

Secondary

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

Predicted band size: 42 kDa

Observed band size: 42 kDa



Western blot - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

Actin Western blot staining using rabbit Anti-Actin antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-Actin antibody [EPR16769] - Loading Control (ab179467) at 1/20000 dilution

Lane 1:
HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell lysates at 20 µg

Lane 2:
293T (Human epithelial cells from embryonic kidney) whole cell lysates at 20 µg

Lane 3:
Human skeletal muscle tissue lysate at 20 µg

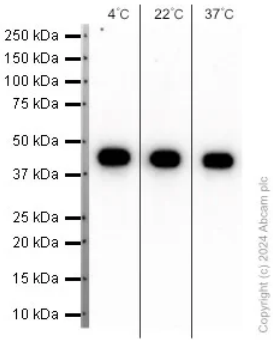
Lane 4:
Human fetal spleen tissue lysate at 20 µg

Secondary

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

Predicted band size: 42 kDa

Observed band size: 42 kDa



Western blot - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

Actin Western blot staining of HeLa whole cell lysate using rabbit Anti-Actin antibody

This blot was produced using 4-20% SDS-PAGE containing 15 µg of HeLa whole cell lysate per lane at 150V for 1hr before being transferred onto a 0.45 µm PVDF membrane at 75V for 1hr. The membrane was then blocked for 1hr using 5% NFDM/TBST, then incubated with ab179467 (1/20,000) at room temperature for 1hr. After being washed three times in TBST, the membrane was incubated with Peroxidase conjugated goat anti-rabbit IgG (H+L) (ab97051) at 1/20,000 dilution for 1hr at room temperature. The membrane was washed three times again. Then the signal was developed using the ECL technique.

ab179467 was stored at a range of temperatures (+4°C, +22°C, +37°C) for 1 week before being tested in WB. The image shows the band intensity remains relatively constant across all storage temperatures, demonstrating that antibody activity is not affected under these conditions. This data was generated as part of a structured antibody stability study supporting Abcam’ s transition from cold⊠chain to ambient shipping.

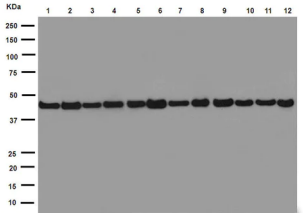
All lanes:
Western blot - Anti-Actin antibody [EPR16769] - Loading Control (ab179467) at 1/20000 dilution

All lanes:
HeLa whole cell lysate at 15 µg with NDFM/TBST

Secondary

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

Exposure time: 20s



Western blot - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

Actin Western blot staining using rabbit Anti-Actin antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-Actin antibody [EPR16769] - Loading Control (ab179467) at 1/20000 dilution

Lane 1:
Mouse brain tissue lysate at 10 µg

Lane 2:
Mouse heart tissue lysate at 10 µg

Lane 3:
Mouse kidney tissue lysate at 10 µg

Lane 4:
Mouse spleen tissue lysate at 10 µg

Lane 5:
Rat brain tissue lysate at 10 µg

Lane 6:
Rat heart tissue lysate at 10 µg

Lane 7:

Rat kidney tissue lysate at 10 µg

Lane 8:
Rat spleen tissue lysate at 10 µg

Lane 9:
C6 (Rat glial tumor cells) whole cell lysates at 10 µg

Lane 10:
RAW 264.7 (Mouse macrophage cells transformed with Abelson murine leukemia virus) whole cell lysate at 10 µg

Lane 11:
PC-12 (Rat adrenal gland pheochromocytoma) whole cell lysate at 10 µg

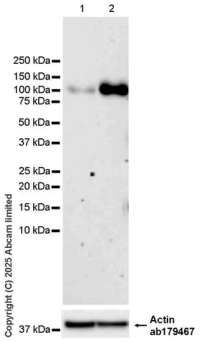
Lane 12:
NIH/3T3 (Mouse embyro fibroblast cells) whole cell lysate at 10 µg

Secondary

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

Predicted band size: 42 kDa

Observed band size: 42 kDa



Western blot - Anti-Actin antibody [EPR16769] - Loading Control (ab179467)

Actin Western blot staining using rabbit Anti-Actin antibody

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

The expression of Ref2P is upregulated in response to reducing Atg8a (PMID:18347073).

Loading control: Anti-Actin antibody [EPR16769] (ab179467) 1:5000 (42Kda).

All lanes:
Western blot - Anti-Ref2P antibody [EPR28159-511] (ab323859) at 1/1000 dilution

Lane 1:
SL2 (Drosophila melanogaster embryo epithelial cell) transfected with scrambled siRNA control whole cell lysate at 20 µg

Lane 2:
SL2 transfected with siRNA specifically targeting Atg8a whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 110 kDa, 42 kDa

Exposure time: 180s

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