abcam

ab32519

Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336]

RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.21% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	YE336
Purification technique	Affinity purification Protein A
Specificity	This antibody is specific for human Myosin Phosphatase 1 and Myosin Phosphatase 2.
Concentration	0.704 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human

Dilution info	1/30
Notes	**For unpurified use at 1/80.**

Expected

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

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/2000
Notes	**For unpurified use at 1/5000.**

Species	Human
Dilution info	1/2000
Notes	**For unpurified use at 1/5000.**

Species	Rat
Dilution info	1/2000
Notes	**For unpurified use at 1/5000.**

Species	Recombinant full length protein - Human
Dilution info	1/1000
Notes	**For unpurified use at 1/5000.**

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Expected

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

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/40 - 1/100
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Not recommended

Species	Recombinant full length protein - Human

Dilution info	-
Notes	-

Target data

See full target information PPP1R12A

Function	Key regulator of protein phosphatase 1C (PPP1C). Mediates binding to myosin. As part of the PPP1C complex, involved in dephosphorylation of PLK1. Capable of inhibiting HIF1AN-dependent suppression of HIF1A activity.

Storage

Shipped at conditions	Blue Ice
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

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.

Supplementary info

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

Activity summary	Myosin Phosphatase also known as Myosin Light Chain Phosphatase is a critical enzyme involved in muscle contraction regulation. It has no specific subunit weight assigned to it but the holoenzyme usually consists of three subunits: a catalytic subunit (PP1c) a large regulatory subunit (MYPT1) and a small regulatory subunit (M20). Myosin Phosphatase is expressed in smooth muscle and non-muscle tissues where it plays a role in the relaxation phase of muscle contraction.

Biological function summary	Myosin Phosphatase functions by dephosphorylating myosin light chains which leads to muscle relaxation. It is an essential component of the Myosin Phosphatase holoenzyme complex which ensures smooth muscle function. Through its activity this enzyme influences processes such as cell motility cell division and vascular tone maintenance. Its activity is regulated by signals that affect the phosphorylation state of its target substrates.
Pathways	Myosin Phosphatase is a critical player in the Rho/Rhokinase signaling pathways. It participates in the regulation of cellular contraction and cytoskeletal dynamics. Within these pathways it interacts closely with Rho-associated protein kinase (ROCK) which can inhibit Myosin Phosphatase activity by phosphorylating the MYPT1 subunit. This pathway influence extends to its interactions with other proteins like Cdc42 and Rac which participate in similar cellular functions.
Associated diseases and disorders	Myosin Phosphatase is linked to hypertension and asthma. Dysregulation of Myosin Phosphatase activity can result in altered muscle tone and has implications in abnormal vascular smooth muscle contraction contributing to high blood pressure. In asthma abnormal airway smooth muscle contractions lead to bronchoconstriction further supported by its interaction with proteins such as ROCK and myosin light chain kinase (MLCK) both involved in similar disease-related pathways.

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

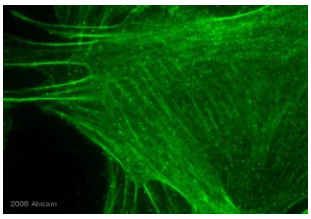
We do not recommend this combination. It is not covered by our product promise.

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.

9 product images

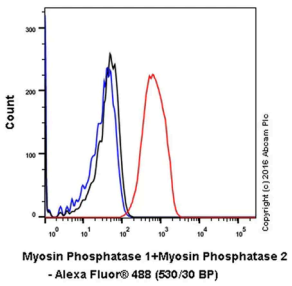


This image is courtesy of an anonymous customer review

Immunocytochemistry/ Immunofluorescence - Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336] (ab32519)

Myosin Phosphatase + Myosin Phosphatase 2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody

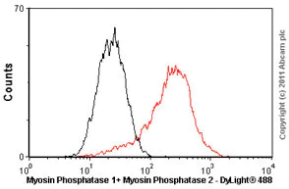
ab32519 staining mouse fibroblast cells by ICC/IF. Cells were PFA fixed, permeabilized in Triton X-100 and blocked in 1% BSA for 30 minutes at 25°C. The primary antibody was diluted 1/200 and incubated with sample for 4 hours at 25°C. An Alexa Fluor® 488 conjugated goat monoclonal to rabbit, diluted 1/500 was used as the secondary.



Flow Cytometry (Intracellular) - Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336] (ab32519)

Myosin Phosphatase + Myosin Phosphatase 2 Flow Cytometry (Intracellular) staining using rabbit Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody

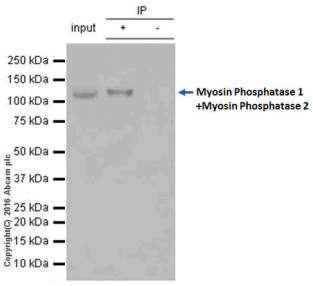
Intracellular Flow Cytometry analysis of HeLa cells labelling Myosin Phosphatase 1+Myosin Phosphatase 2 (red) with purified ab32519 at dilution of 1/40. The secondary antibody used was goat anti rabbit IgG (FITC) at 1/500. Cells were fixed with 4% paraformaldehyde. Isotype control antibody was Rabbit monoclonal IgG (black). The blue line shows cells without incubation with primary antibody and secondary antibody.



Flow Cytometry (Intracellular) - Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336] (ab32519)

Myosin Phosphatase + Myosin Phosphatase 2 Flow Cytometry (Intracellular) staining using rabbit Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody

Overlay histogram showing HEK293 cells stained with unpurified ab32519 (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 (ab32519 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (1µg/1x10^6 cells) used under the same conditions. Acquisition of >5000 events was performed. This antibody gave a positive signal in HEK293 cells fixed with 100% methanol (5 min)/permeabilized in 0.1% PBS-Tween used under the same conditions.



Immunoprecipitation - Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336] (ab32519)

ab32519 at 1/30 dilution immunoprecipitating Myosin Phosphatase 1+Myosin Phosphatase 2 in HeLa whole cell lysate observed at 110 KDa (lanes 1 and 2).
Lane 1 (input): HeLa whole cell lysate 10ug

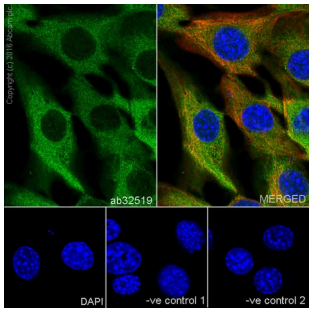
Lane 2 (+): ab32519 + HeLa whole cell lysate

Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab32519 in HeLa whole cell lysate

For western blotting, ab32519 was used followed by VeriBlot for IP Detection Reagent (HRP) (ab131366) for detection at a dilution of 1/10,000.

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

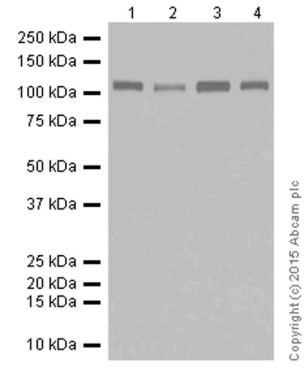
All lanes:
Immunoprecipitation - Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336] (ab32519)



Immunocytochemistry/ Immunofluorescence - Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336] (ab32519)

Myosin Phosphatase + Myosin Phosphatase 2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody

Immunocytochemistry/Immunofluorescence analysis of NIH/3T3 cells labelling Myosin Phosphatase 1+Myosin Phosphatase 2 with purified ab32519 at 1/100. Cells were fixed with 4% Paraformaldehyde and permeabilised with 0.1% Triton X-100. ab150077, Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody. Cells were counter-stained with ab7291 anti-Tubulin (mouse mAb) followed by ab150120, AlexaFluor®594 goat anti-mouse secondary both at 1/1000. Nuclei were counterstained with DAPI (blue).
For negative control 1, rabbit primary antibody was used followed by anti-mouse secondary antibody (ab150120). For negative control 2, ab7291 (mouse primary antibody) was used followed by anti-rabbit secondary antibody (ab150077).



Western blot - Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336] (ab32519)

Myosin Phosphatase + Myosin Phosphatase 2 Western blot staining using rabbit Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody

Blocking and Diluting buffer 5% NFDM/TBST
All lanes:
Western blot - Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336] (ab32519) at 1/2000 dilution

Lane 1:
HeLa whole cell lysate at 20 µg

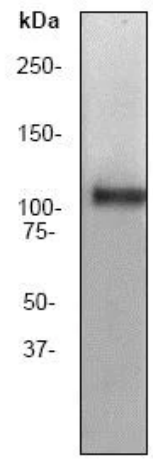
Lane 2:
Jurkat whole cell lysate at 20 µg

Lane 3:
293T whole cell lysate at 20 µg

Lane 4:
MCF-7 whole cell lysate at 20 µg

Secondary

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

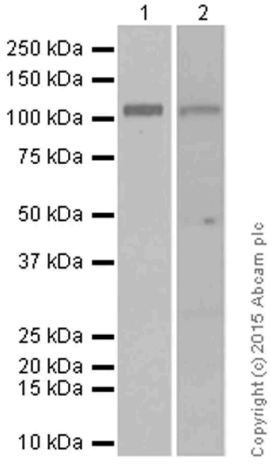


Western blot - Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336] (ab32519)

All lanes:
Western blot - Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336] (ab32519) at 1/5000 dilution

All lanes:
293T cell lysate.

Observed band size: 110 kDa



Western blot - Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336] (ab32519)

Blocking and Diluting buffer 5% NFDM/TBST
All lanes:
Western blot - Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336] (ab32519) at 1/2000 dilution

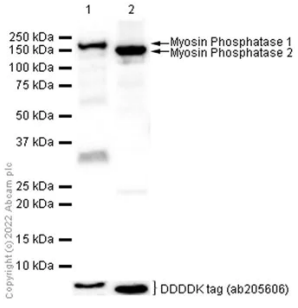
Lane 1:
NIH/3T3 whole cell lysate at 20 µg

Lane 2:
C6 whole cell lysate at 20 µg

Secondary

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

Observed band size: 110 kDa



Western blot - Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336] (ab32519)

Blocking and diluting buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-Myosin Phosphatase + Myosin Phosphatase 2 antibody [YE336] (ab32519) at 1/1000 dilution

Lane 1:

Human Myosin Phosphatase 1 full-length recombinant protein with DDDDK tag at 0.01 µg

Lane 2:
Human Myosin Phosphatase 2 full-length recombinant protein with DDDDK tag at 0.01 µg

Secondary

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

Observed band size: 150 kDa

Exposure time: 5s

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