abcam

ab89594

Anti-Myosin Light Chain 2 antibody [AT3B2]

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.2% Sodium azide Constituents: PBS, 10% Glycerol (glycerin, glycerine)
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human MYL2. Database link P10916
Clone number	AT3B2
Purification technique	Affinity purification Protein A
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Rat
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Expected

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

Target data

See full target information MYL2

Function Contractile protein that plays a role in heart development and function (PubMed:23365102, PubMed:32453731). Following phosphorylation, plays a role in cross-bridge cycling kinetics and cardiac muscle contraction by increasing myosin lever arm stiffness and promoting myosin head diffusion; as a consequence of the increase in maximum contraction force and calcium sensitivity of contraction force. These events altogether slow down myosin kinetics and prolong duty cycle resulting in accumulated myosins being cooperatively recruited to actin binding sites to sustain thin filament activation as a means to fine-tune myofilament calcium sensitivity to force (By similarity). During cardiogenesis plays an early role in cardiac contractility by promoting cardiac myofibril assembly (By similarity).

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

This product was changed from ascites to tissue culture supernatant on 11th April 2019. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

Supplementary info

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

Activity summary	Myosin Light Chain 2 (MLC2) also known as ventricular myosin regulatory light chain (MLC2v) or smooth muscle myosin light chain is a critical component of the myosin protein complex. It is a low-molecular-weight protein with a mass typically around 20 kDa. Myosin Light Chain 2 plays a mechanical role in muscle contraction where it interacts with myosin heavy chain and actin filaments. This interaction modulates muscle contraction in both cardiac and smooth muscle tissues. MLC2 is ubiquitously expressed in muscles but exhibits specific expression patterns in cardiac and smooth muscles.
Biological function summary	Myosin Light Chain 2 plays a fundamental role in muscle function by regulating myofilament sensitivity to calcium ions. It functions as part of the myosin complex which is essential for actin-myosin interactions required for muscle contraction. Phosphorylation of MLC2 alters the actomyosin activity affecting muscle contraction strength and speed. This regulation contributes significantly to muscle tone contractility and overall heart function.
Pathways	Myosin Light Chain 2 is a pivotal player in the calcium signaling and smooth muscle contraction pathways. Within these pathways phosphorylation leads to myosin cross-bridge cycling with actin facilitated by proteins like calmodulin and myosin light chain kinase (MLCK). This biochemical interaction not only underpins smooth muscle function but also plays roles in other processes like cell motility and division emphasizing MLC2's versatility in cellular mechanics.
Associated diseases and disorders	Aberrations in Myosin Light Chain 2 function or expression implicate it in cardiac hypertrophy and certain smooth muscle dysfunctions such as hypertension. Changes in MLC2 phosphorylation state can directly affect cardiac contractility worsening conditions like hypertrophic cardiomyopathy. It also relates closely with

other proteins such as MLCK and calmodulin which are involved in these disease pathways highlighting a complex network of regulatory mechanisms that when disrupted can lead to severe health issues.

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

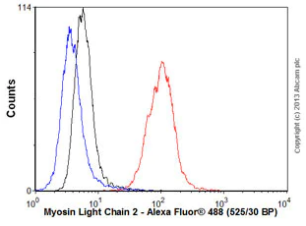
We do not recommend this combination. It is not covered by our product promise.

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.

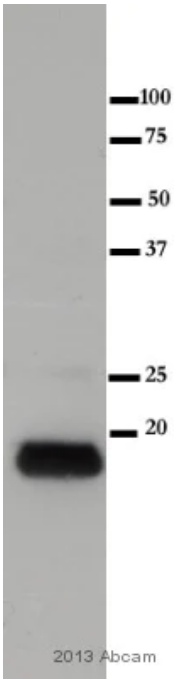
3 product images



Flow Cytometry (Intracellular) - Anti-Myosin Light Chain 2 antibody [AT3B2] (ab89594)

Myosin Light Chain 2 Flow Cytometry (Intracellular) staining using mouse Anti-Myosin Light Chain 2 antibody

Overlay histogram showing A431 cells stained with ab89594 (red line). The cells were fixed with 80% methanol (5 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 (ab89594, 0.1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-mouse IgG (H&L) (ab150113) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2b [PLPV219] (ab91366, 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 image was generated using the ascites version of the product.



This image is courtesy of an anonymous customer review

Western blot - Anti-Myosin Light Chain 2 antibody [AT3B2] (ab89594)

This image was generated using the ascites version of the product.
All lanes:
Western blot - Anti-Myosin Light Chain 2 antibody [AT3B2] (ab89594) at 1/2000 dilution

All lanes:
Rabbit heart tissue lysate at 10 µg

Secondary

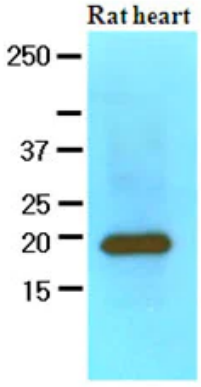
All lanes:
HRP conjugated goat anti-mouse at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 19 kDa

Exposure time: 1min



Western blot - Anti-Myosin Light Chain 2 antibody [AT3B2] (ab89594)

Myosin Light Chain 2 Western blot staining of rat heart extracts using mouse Anti-Myosin Light Chain 2 antibody

This image was generated using the ascites version of the product.
All lanes:
Western blot - Anti-Myosin Light Chain 2 antibody [AT3B2] (ab89594) at 1/1000 dilution

All lanes:
rat heart extracts at 60 µg

Secondary

All lanes:
goat anti-mouse HRP

Developed using the ECL technique.

Predicted band size: 19 kDa

Observed band size: 19 kDa

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