abcam

ab113692

Anti-Tropomyosin 3 antibody [3D5AH3AB4]

KO Validated

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	pH: 7.5 Preservative: 0.02% Sodium azide Constituents: HEPES buffered saline
Form	Liquid
Clonality	Monoclonal
Clone number	3D5AH3AB4
Purification technique	Proprietary technique
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	The antibody was produced in vitro using hybridomas grown in serum-free medium, and then purified by biochemical fractionation. Purity >95% by SDS-PAGE.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	0.1 µg for 10^6 Cells

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

Expected

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

WB

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

Species	Rat
Dilution info	1 µg/mL
Notes	-

Species	Mouse
Dilution info	1 µg/mL
Notes	-

ICC/IF

Tested

Species	Rat
Dilution info	2 µg/mL
Notes	-

Species	Human
Dilution info	2 µg/mL
Notes	-

Species	Mouse
Dilution info	2 µg/mL
Notes	-

IHC-P

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

Expected

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

Target data

See full target information Tropomyosin-3

Function	Binds to actin filaments in muscle and non-muscle cells. Plays a central role, in association with the troponin complex, in the calcium dependent regulation of vertebrate striated muscle contraction. Smooth muscle contraction is regulated by interaction with caldesmon. In non-muscle cells is implicated in stabilizing cytoskeleton actin filaments.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

Supplementary info

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

Activity summary	Tropomyosin 3 also known as TPM3 is an actin-binding protein that stabilizes actin filaments. This protein plays an important role in maintaining cytoskeleton integrity and regulating cell contraction. Tropomyosin 3 has a molecular weight of approximately 32.5 kDa and is widely expressed in various tissues especially in muscle cells and in some non-muscle tissues. This protein interacts with other proteins to form complexes that modulate the dynamics of the actin filament systems.
Biological function summary	Tropomyosin 3 modulates the access of other actin-binding proteins to the actin filament by covering and uncovering binding sites. It partners with actin and troponin complexes influencing muscle contraction and cell motility. Additionally TPM3 regulates the stability and flexibility of actin cortex important for cell shape and movement. In non-muscle cells it supports the formation of cell structures needed for signaling and transportation.
Pathways	Tropomyosin 3 functions in the regulation of the actin cytoskeleton pathway and the muscle contraction pathway. It coordinates with proteins like actin and myosin to facilitate these processes. In the actin cytoskeleton pathway TPM3 balances polymerization and depolymerization of actin important for maintaining cellular structures. The muscle contraction pathway relies on TPM3 to regulate calcium binding supporting muscular function and responsiveness.
Associated diseases and disorders	Tropomyosin 3 mutations link to conditions like congenital myopathy and nemaline myopathy. Mutations in TPM3 affect muscle fiber regulation leading to muscle weakness and structural abnormalities. Congenital myopathy involves other proteins such as nebulin which cooperate with TPM3 in maintaining muscle architecture. In nemaline myopathy improper expression or structure of TPM3 contributes to defective sarcomere formation impairing muscle function.

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

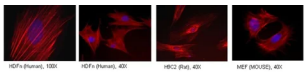
We do not recommend this combination. It is not covered by our product promise.

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.

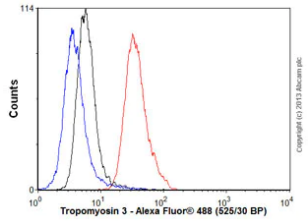
5 product images



Immunocytochemistry/ Immunofluorescence - Anti-Tropomyosin 3 antibody [3D5AH3AB4] (ab113692)

Tropomyosin 3 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Tropomyosin 3 antibody

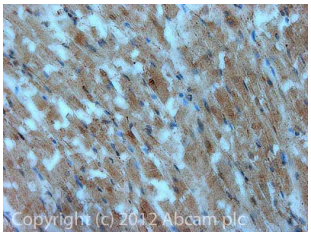
ab113692 stained human fibroblast (HDFn) cells, rat cardiomyocytes (H9C2 cells) and mouse embryo fibroblast (MEF) cells. The cells were paraformaldehyde fixed (4%, 20 min) and Triton X-100 permeabilized (0.1%, 15 min). The cells were incubated with the antibody (3D5AH3AB4,5 µg/ml) for 2h at room temperature or over night at 4°C. The secondary antibody was (red) Alexa Fluor® 594 goat anti-mouse IgG2b (H+L) at a 1/1000 dilution for 1h. 10% Goat serum was used as the blocking agent for all blocking steps. The target protein locates to cytoskeleton.



Flow Cytometry - Anti-Tropomyosin 3 antibody [3D5AH3AB4] (ab113692)

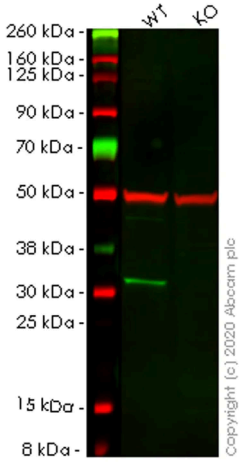
Tropomyosin 3 Flow Cytometry staining using mouse Anti-Tropomyosin 3 antibody

Overlay histogram showing A431 cells stained with ab113692 (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 (ab113692, 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Tropomyosin 3 antibody [3D5AH3AB4] (ab113692)

IHC image of Tropomyosin 3 staining in Human heart formalin fixed paraffin embedded tissue section, performed on a Leica BondTM system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab113692, 10µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.
For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Western blot - Anti-Tropomyosin 3 antibody [3D5AH3AB4] (ab113692)

Tropomyosin 3 Western blot staining using mouse Anti-Tropomyosin 3 antibody

Lanes 1-2: Merged signal (red and green). Green - ab113692 observed at 37 kDa. Red - loading control ab52901 observed at kDa.
ab113692 Anti-Tropomyosin 3 antibody [3D5AH3AB4] was shown to specifically react with Tropomyosin 3 in wild-type HEK-293T cells. Loss of signal was observed when knockout cell line ab266422 (knockout cell lysate ab258245) was used. Wild-type and Tropomyosin 3 knockout samples were subjected to SDS-PAGE. ab113692 and Anti-beta Tubulin [EP1331Y] - Microtubule Marker (ab52901) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (ab216777) and Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed (ab216772) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Tropomyosin 3 antibody [3D5AH3AB4] (ab113692) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T (Human epithelial cell line from embryonic kidney transformed with large T antigen) whole cell lysate at 20 µg

Lane 2:
TPM3 knockout HEK-293T (Human epithelial cell line from embryonic kidney transformed with large T antigen) whole cell lysate at 20 µg

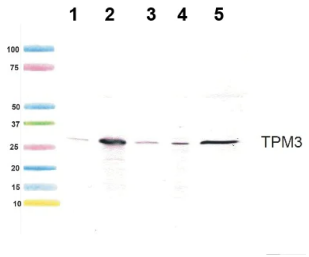
Lane 2:
Western blot - Human TPM3 (Tropomyosin 3) knockout HEK-293T cell line (ab266422)

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (ab216777) at 1/10000 dilution

Predicted band size: 33 kDa

Observed band size: 37 kDa



Western blot - Anti-Tropomyosin 3 antibody [3D5AH3AB4] (ab113692)

All lanes:
Western blot - Anti-Tropomyosin 3 antibody [3D5AH3AB4] (ab113692) at 1 µg/mL

Lane 1:
HepG2 (human) at 20 µg

Lane 2:
HDFN (human) at 20 µg

Lane 3:
H9C2 (rat) at 20 µg

Lane 4:
H4IIE (rat) at 20 µg

Lane 5:
MEF (mouse) at 20 µg

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 33 kDa

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