abcam

ab32362

Anti-Desmin antibody [Y66] - Cytoskeleton Marker

Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362) is a rabbit monoclonal antibody detecting Desmin in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Guinea pig, Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 170 publications
- Trusted since 2006

Lab Essentials | Recombinant | RabMAb | 20ul selling size

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), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	Y66
Purification technique	Affinity purification Protein A
Epitope	ab32362 reacts with an epitope located in the C terminal region of desmin.
Concentration	0.39 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Expected

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

ICC/IF

Tested

Species	Mouse
Dilution info	1/100 - 1/1000
Notes	-

Species	Human
Dilution info	1/100 - 1/1000
Notes	-

Expected

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

IP

Not recommended

Species	Mouse, Rat, Guinea pig, Human
Dilution info	-

Notes	-

WB

Tested

Species	Mouse
Dilution info	1/100000
Notes	-

Species	Rat
Dilution info	1/100000
Notes	-

Species	Guinea pig
Dilution info	1/100000
Notes	-

Species	Human
Dilution info	1/100000
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/70
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Target data

See full target information DES

Function	Muscle-specific type III intermediate filament essential for proper muscular structure and function. Plays a crucial role in maintaining the structure of sarcomeres, inter-connecting the Z-disks and forming the myofibrils, linking them not only to the sarcolemmal cytoskeleton, but also to the nucleus and mitochondria, thus providing strength for the muscle fiber during activity (PubMed:25358400). In adult striated muscle they form a fibrous network connecting myofibrils to each other and to the plasma membrane from the periphery of the Z-line structures (PubMed:24200904, PubMed:25394388, PubMed:26724190). May act as a sarcomeric microtubule-anchoring protein: specifically associates with detyrosinated tubulin-alpha chains, leading to buckled microtubules and mechanical resistance to contraction. Required for nuclear membrane integrity, via anchoring at the cell tip and nuclear envelope, resulting in maintenance of microtubule-derived intracellular mechanical forces (By similarity). Contributes to the transcriptional regulation of the NKX2-5 gene in cardiac progenitor cells during a short period of cardiomyogenesis and in cardiac side population stem cells in the adult. Plays a role in maintaining an optimal conformation of nebulette (NEB) on heart muscle sarcomeres to bind and recruit cardiac alpha-actin (By similarity).

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

Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt (Intra), ICC/IF, IHC-P, WB in guinea pig, human, mouse, rat samples.

Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362) has been cited over 176 times in peer reviewed journals and is trusted by the scientific community.

Abcams high quality manufacturing and validation processes ensure Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.

Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362) has 12 independent reviews from customers.

Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362) specifically detects Desmin (UniProt ID: P17661; Molecular weight: 53kDa) and is sold in 100 uL and 1 mL selling sizes.

Conjugation-ready, carrier free format available for antibody clone Y66 - ab271829.

Antibody clone Y66 is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 488, Alexa Fluor® 647, HRP, Biotin, Alexa Fluor® 594, Alexa Fluor® 555, APC, PE (ab18533, ab195177, ab195178, ab19763, ab23419, ab23422, ab224934, ab224935).

Desmin is a crucial muscle-specific type III intermediate filament protein essential for maintaining the structural integrity of muscle cells. Mutations in Desmin can lead to myopathy and cardiomyopathy, causing muscle weakness and heart disease. Utilizing Desmin as a biomarker can significantly aid in diagnosing these conditions and guiding treatment strategies.

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	Desmin also referred to as Desmin 20 is an intermediate filament protein with a molecular weight of approximately 53 kDa. Primarily found in muscle cells desmin provides structural integrity to cells being an important component of the cytoskeleton. Desmin expression is highly specific to cardiac skeletal and smooth muscle tissues and it can be detected using desmin marker techniques like desmin IHC (Immunohistochemistry). Desmin staining or desmin stain methods are commonly employed in diagnostic labs to visualize this protein within tissue samples.
Biological function summary	Desmin plays a significant role in maintaining cellular architecture by anchoring organelles such as nuclei and mitochondria within the cytoplasm. It associates with other proteins to form desmin intermediate filament networks which facilitate force transmission and maintain mechanical integrity. This protein does not operate in isolation but is part of a larger complex of cytoskeletal elements that

	reinforce muscle cell shape and resilience. Its interactions and binding with other cytoskeletal components confirm its essential role in muscle structure.
Pathways	Desmin links closely to the cell structure and function pathways providing stability during muscle contraction processes. It interacts with other proteins including actin and tubulin within the cytoskeleton network ensuring coordinated responses to mechanical stress. Specifically desmin integrates into pathways related to the maintenance of the sarcomere structure thereby connecting to additional important proteins like myosin and dystrophin which collectively uphold muscular function and integrity.
Associated diseases and disorders	Desmin mutations can lead to myopathies such as desmin-related myopathy (DRM) or cardiomyopathy where the structural disruptions result in abnormal muscle function. These conditions typically manifest as muscle weakness or cardiac abnormalities. Furthermore its relationship to the sarcomere suggests interactions with proteins like dystrophin in muscular dystrophies where desmin integrity critically influences disease progression and severity. Understanding desmin's link to such disorders underpins its role as a diagnostic marker and a potential therapeutic target in muscle-related diseases.

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

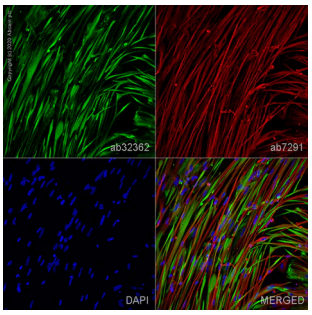
We do not recommend this combination. It is not covered by our product promise.

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.

20 product images



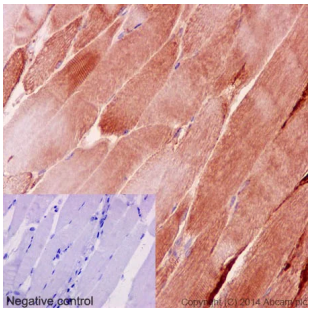
Immunocytochemistry/ Immunofluorescence - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

Desmin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Desmin antibody

Immunofluorescence staining of Desmin using ab32362 in ab277612, which were differentiated for 10 days post induction.
The cells were fixed with 100% MeOH (5 min) and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab32362 at 0.02 µg/mL and ab7291, Mouse monoclonal [DM1A] to alpha Tubulin, at 1/1000 dilution. Cells were then incubated with ab150081, Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (shown in green) and ab150120, Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) preadsorbed at 1/1000 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue).

Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a maximum intensity projection of confocal sections is shown. Gamma is adjusted to 1.5 in all channels.

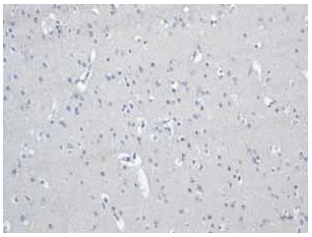
The antibody ab32362 gave comparable results using 4% formaldehyde fixation (10 min).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

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

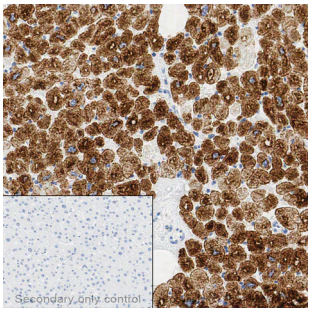
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human skeletal muscle tissue labelling Desmin with purified ab32362 at 1/2000. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. ab97051 a HRP-conjugated goat anti-rabbit IgG (H+L) was used as the secondary antibody (1/500). Negative control using PBS instead of primary antibody. Counterstained with hematoxylin.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

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

Immunohistochemistry (Formalin/PFA-fixed parffin-embedded sections) analysis of normal human brain tissue. Unpurified ab32362 shows negative staining.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

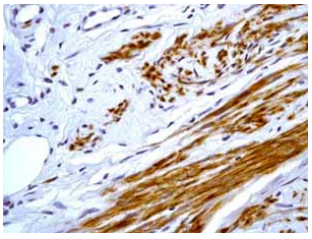


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

Immunohistochemical analysis of formalin fixed paraffin embedded human heart labelling Desmin with ab32362 at a concentration of 0.1 µg/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.

Anti-Desmin antibody [Y66] ab32362 was incubated for 16mins at 37°C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.

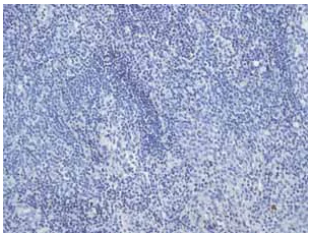
Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

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

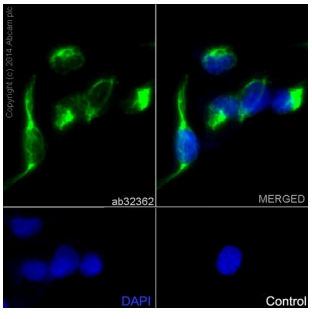
Immunohistochemistry (Formalin/PFA-fixed parffin-embedded sections) analysis of normal human uterus tissue labelling Desmin with unpurified ab32362.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

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

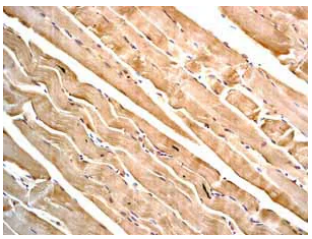
Immunohistochemistry (Formalin/PFA-fixed parffin-embedded sections) analysis of normal human tonsil tissue. Unpurified ab32362 shows negative staining.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

Desmin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Desmin antibody

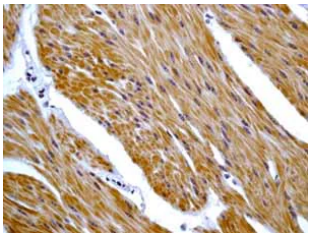
Immunocytochemistry/Immunofluorescence analysis of A673 cells labelling Desmin with purified ab32362 at 1/50. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150077 an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500) was used as the secondary antibody. DAPI (blue) was used as the nuclear counterstain.
Control: primary antibody (1/50) and secondary antibody ab150120 an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/500).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

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

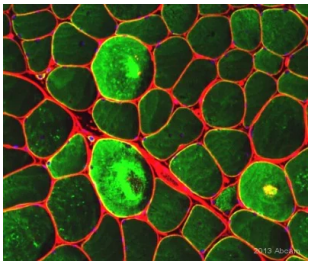
Immunohistochemistry (Formalin/PFA-fixed parffin-embedded sections) analysis of human skeletal muscle tissue labelling Desmin with unpurified ab32362.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

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

Immunohistochemistry (Formalin/PFA-fixed parffin-embedded sections) analysis of normal human urinary bladder tissue labelling Desmin with unpurified ab32362.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

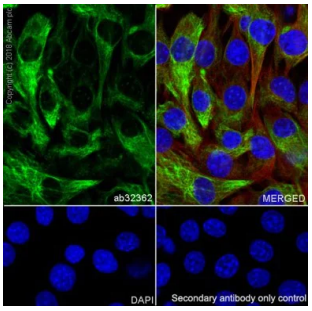


This image is courtesy of an anonymous customer review.

Immunocytochemistry/ Immunofluorescence - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

Desmin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Desmin antibody

Unpurified ab32362 staining Desmin (green) in Human skeletal muscle cells by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with methacarn and blocked with 10% serum for 20 minutes at 22°C. Samples were incubated with primary antibody (1/150) for 12 hours. An Alexa Fluor® 488-conjugated Goat anti-rabbit IgG polyclonal (1/200) was used as the secondary antibody. Blue - DAPI-nuclei. Red - WGA. 40X objective.



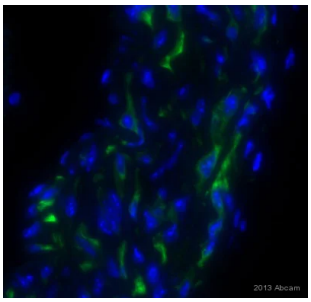
Immunocytochemistry/ Immunofluorescence - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

Desmin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Desmin antibody

Immunocytochemistry/Immunofluorescence analysis of C2C12 (Mouse myoblasts myoblast) cells labeling Desmin with ab32362 at 1/500. Cells were fixed with 100% Methanol. ab150077 an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody. DAPI (blue) was used as the nuclear counterstain.

ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1/200 was used as counterstain antibody.

Confocal image showing cytoplasmic staining on C2C12 cell line.

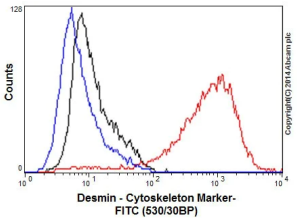


This image is courtesy of an anonymous customer review.

Immunocytochemistry/ Immunofluorescence - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

Desmin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Desmin antibody

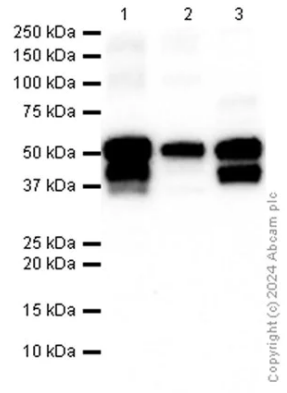
Unpurified ab32362 staining Desmin (green) in Mouse aorta smooth muscle cells by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with formalin and blocked with 10% serum for 20 minutes at 22°C. Samples were incubated with primary antibody (1/150) for 1 hour at 22°C. An Alexa Fluor® 488-conjugated Goat anti-rabbit IgG polyclonal (1/200) was used as the secondary antibody. Blue - nuclei.



Flow Cytometry (Intracellular) - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

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

Intracellular Flow Cytometry analysis of C2C12 cells labelling Desmin with purified ab32362 at 1/70 (red). Cells were fixed with 2% paraformaldehyde. A FITC-conjugated goat anti-rabbit IgG (1/150) was used as the secondary antibody. Black - Isotype control, rabbit monoclonal IgG. Blue - Unlabelled control, cells without incubation with primary and secondary antibodies.



Western blot - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

Blocking and diluting buffer concentration: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID: 26041514, 32322014, and 28955862).

All lanes:
Western blot - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362) at 1/1000 dilution

Lane 1:
Human skeletal muscle tissue lysate at 20 µg

Lane 2:
Mouse heart tissue lysate at 20 µg

Lane 3:
C2C12 (Mouse myoblasts myoblast) whole cell lysate at 20 µg

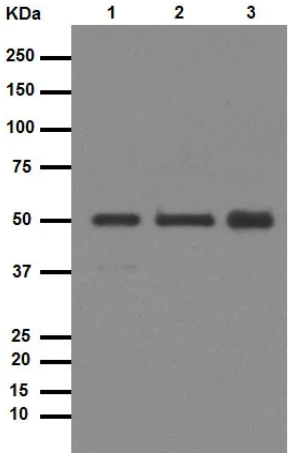
Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Predicted band size: 54 kDa

Observed band size: 53 kDa, 35-50 kDa

Exposure time: 3s



Western blot - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

Desmin Western blot staining using rabbit Anti-Desmin antibody

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

All lanes:
Western blot - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362) at 1/500000 dilution

Lane 1:
Human skeletal muscle tissue lysate at 20 µg

Lane 2:
Human fetal heart tissue lysate at 20 µg

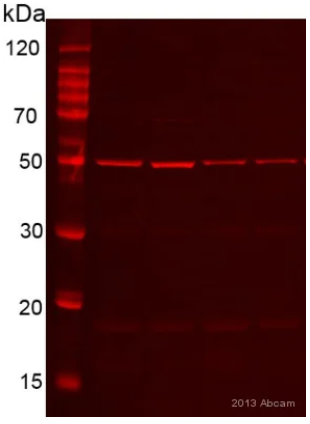
Lane 3:
Human fetal muscle tissue lysate at 20 µg

Secondary

All lanes:
HRP-conjugated anti-rabbit IgG, specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 54 kDa

Observed band size: 53 kDa



This image is courtesy of an anonymous customer review

Western blot - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

All lanes:
Western blot - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362) at 1/500 dilution

All lanes:
Human skeletal muscle whole tissue lysate at 20 µg

Secondary

All lanes:
IRDye® 680-conjugated anti-rabbit at 1/5000 dilution

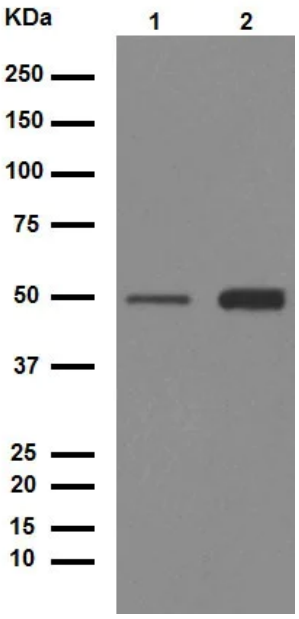
Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 54 kDa

Observed band size: 53 kDa

Exposure time: 50s



Western blot - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

Desmin Western blot staining using rabbit Anti-Desmin antibody

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

All lanes:
Western blot - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362) at 1/500000 dilution

Lane 1:
Mouse heart tissue lysate at 20 µg

Lane 2:
Rat heart tissue lysate at 20 µg

Secondary

All lanes:
HRP-conjugated anti-rabbit IgG, specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 54 kDa

Observed band size: 53 kDa

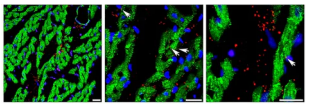
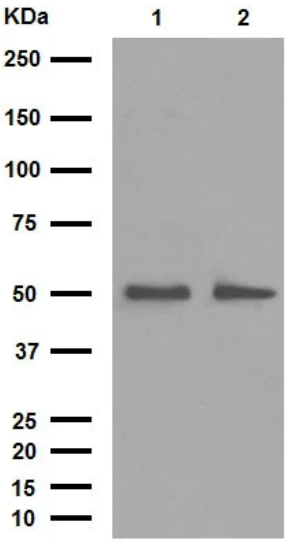


Image from Cowan DB et al. Intracoronary Delivery of Mitochondria to the Ischemic Heart for Cardioprotection. PLoS One 11:e0160889 (2016).

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

Immunofluorescent analysis of Human mitochondria injected rabbit hearts sections stained for Desmin (Green) using ab32362. MTCO2, the human-specific mitochondrial marker was stained in red, and the nuclei was stained using the DNA stain DAPI (blue).



Western blot - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

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

All lanes:
Western blot - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362) at 1/100000 dilution

Lane 1:
Guinea pig heart tissue lysate at 10 µg

Lane 2:
Guinea pig muscle tissue lysate at 10 µg

Secondary

All lanes:
Peroxidase-conjugated goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size: 54 kDa

Observed band size: 53 kDa

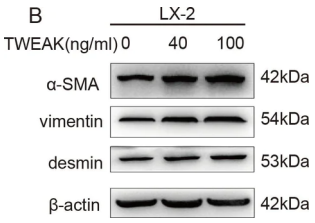


Image collected and cropped by CiteAb under a CC-BY license from the publication

Western blot - Anti-Desmin antibody [Y66] - Cytoskeleton Marker (ab32362)

Desmin Western blot staining using rabbit Anti-Desmin antibody

Desmin western blot using anti-Desmin antibody [Y66] - Cytoskeleton Marker ab32362. Publication image and figure legend from Xu, M., Zhang, F., et al., 2016, PLoS One, PubMed 27907201.

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TWEAK significantly increased the expression of α-SMA, vimentin, desmin in LX-2 cells and changed the cell morphology.The mRNA (A) and protein (B) of α-SMA, vimentin, desmin in LX-2 cells treated with 40 ng/ml and 100 ng/ml TWEAK for 24 h were analyzed by qRT-PCR and western blot. β-actin served as an internal control. Data are presented as mean ± SD of three independent experiments. (C) Phalloidin stained actin cytoskeleton (green) in LX-2 cells. The nuclear was stained by DAPI (blue). The data shown here are from three independent experiments with similar results. Scale bars, 50um. *p<0.05,**p<0.005,***p<0.0005,****p<0.0001.

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