abcam

ab216616

Anti-Desmin antibody [Y66] - Low endotoxin, Azide free

Recombinant RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	Y66
Purification technique	Affinity purification Protein A
Epitope	ab32362 reacts with an epitope located in the C terminal region of desmin.
Concentration	0.983 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human

Dilution info	-
Notes	-

Expected

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

ICC/IF

Tested

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

Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	-
Notes	ab199376- 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	Blue Ice

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab216616 is the carrier-free version of ab32362.

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

What does low endotoxin mean?
Our low endotoxin, azide-free formats have low endotoxin level (1 EU/mg, determined by the TAL assay) and are free from azide, to achieve consistent experimental results in functional assays.

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

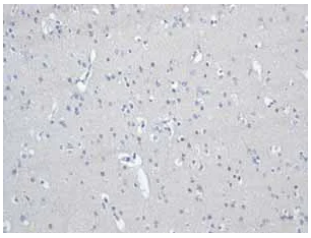
We do not recommend this combination. It is not covered by our product promise.

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.

17 product images

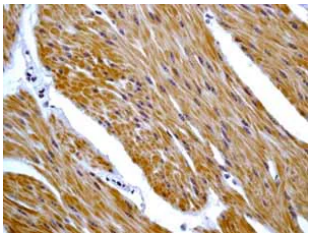


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

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.
This data was developed using the same antibody clone in a different buffer formulation containing PBS BSA glycerol and sodium azide (ab32362).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

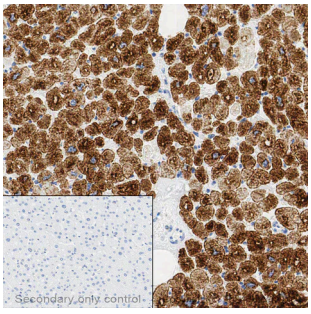


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

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.
This data was developed using the same antibody clone in a different buffer formulation containing PBS BSA glycerol and sodium azide (ab32362).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

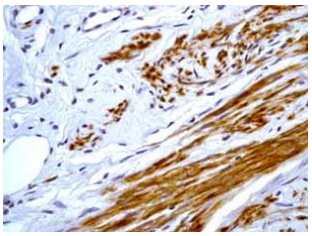


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

This data was developed using the same antibody clone in a different buffer formulation (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).

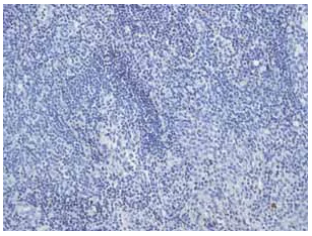


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

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.
This data was developed using the same antibody clone in a different buffer formulation containing PBS BSA glycerol and sodium azide (ab32362).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

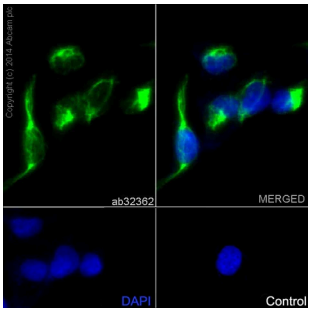


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

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.
This data was developed using the same antibody clone in a different buffer formulation containing PBS BSA glycerol and sodium azide (ab32362).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

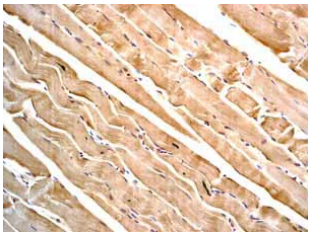


Immunocytochemistry/ Immunofluorescence - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

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).

This data was developed using the same antibody clone in a different buffer formulation containing PBS BSA glycerol and sodium azide (ab32362).

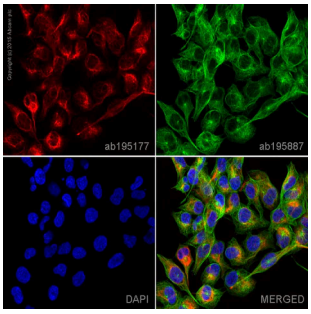


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

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.
This data was developed using the same antibody clone in a different buffer formulation containing PBS BSA glycerol and sodium azide (ab32362).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



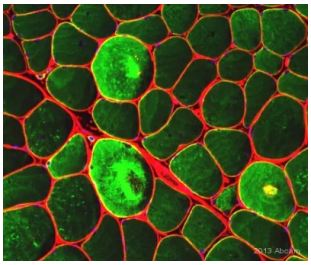
Immunocytochemistry/ Immunofluorescence - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

Desmin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Desmin antibody

Clone Y66 (ab216616) has been successfully conjugated by Abcam. This image was generated using Anti-Desmin antibody [Y66] - Cytoskeleton Marker (Alexa Fluor® 647). Please refer to ab195177 for protocol details.
ab195177 staining Desmin in A673 cells. The cells were fixed with 4% formaldehyde (10 min), permeabilized with 0.1% Triton X-100 for 5 minutes 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 ab195177 at a 1/100 dilution (shown in red) and ab195887, Mouse monoclonal to alpha Tubulin (Alexa Fluor® 488), at a 1/250 dilution (shown in green). Nuclear DNA was labelled with DAPI (shown in blue).

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

This product also gave a positive signal under the same testing conditions in A673 cells fixed with 100% methanol (5 min)

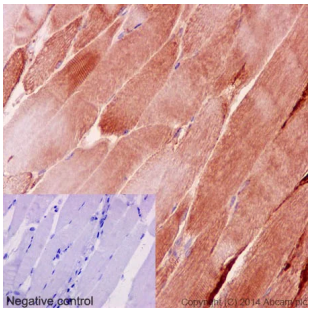


This image is courtesy of an anonymous customer review.

Immunocytochemistry/ Immunofluorescence - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

Desmin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Desmin antibody

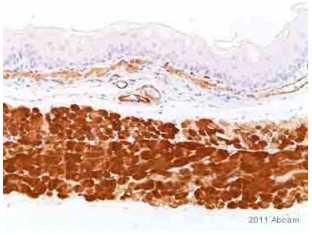
Unpurified ab32362 staining Desmin (green) in Human skeletal muscle cells by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with methacarn and blocked with 10% serum for 20 minutes at 22°C. Samples were incubated with primary antibody (1/150) for 12 hours. An Alexa Fluor® 488-conjugated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



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

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.
This data was developed using the same antibody clone in a different buffer formulation containing PBS BSA glycerol and sodium azide (ab32362).

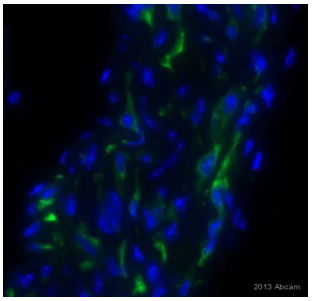


This image is courtesy of an anonymous customer review.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

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

Unpurified ab32362 staining Desmin in nude rat esophagheal tissue by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections). Tissue was fixed with formaldehyde and a heat mediated antigen retrieval step was performed using citrate buffer pH 6. Samples were then blocked with 1% BSA for 20 minutes at 25°C and then incubated with unpurified ab32362 at a 1/400 dilution for 16 hours at 25°C. The secondary used was an undiluted goat anti-rabbit HRP conjugated polyclonal.Striated muscle cells of muscular propria are strongly positive for desmin. Smooth muscle cells and vascular smooth muscle cells in submucosal layer are also positive for desmin.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32362).

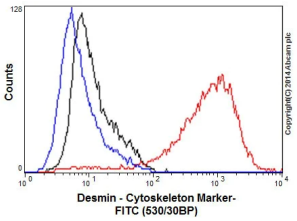


This image is courtesy of an anonymous customer review.

Immunocytochemistry/ Immunofluorescence - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

Desmin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Desmin antibody

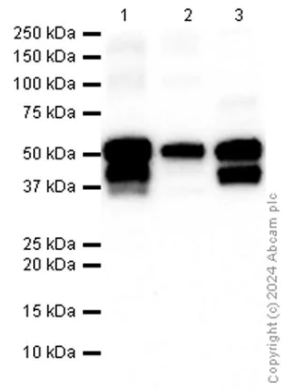
Unpurified ab32362 staining Desmin (green) in Mouse aorta smooth muscle cells by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with formalin and blocked with 10% serum for 20 minutes at 22°C. Samples were incubated with primary antibody (1/150) for 1 hour at 22°C. An Alexa Fluor® 488-conjugated Goat anti-rabbit IgG polyclonal (1/200) was used as the secondary antibody. Blue - nuclei.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32362).



Flow Cytometry (Intracellular) - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

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.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32362).



Western blot - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

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).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32362).

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

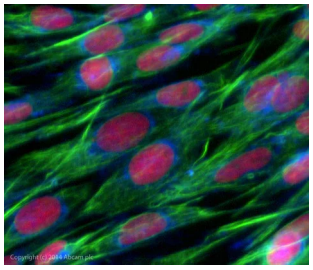
Secondary

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



Immunocytochemistry/ Immunofluorescence - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

Clone Y66 (ab216616) has been successfully conjugated by Abcam. This image was generated using Anti-Desmin antibody [Y66] - Cytoskeleton Marker (Alexa Fluor® 488). Please refer to ab185033 for protocol details.
ab185033 staining Desmin in SV40LT-SMC cells. The cells were fixed with 4% formaldehyde (10min) and then blocked in 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated with ab185033 at 1/50 dilution overnight at +4°C (shown in green). AlexaFluor®350 WGA was used at a 1/200 dilution and incubated for 1h with the cells, to label

plasma membranes (shown in blue). Nuclear DNA was labelled in red with 1.25 µM DRAQ5™ (ab108410).

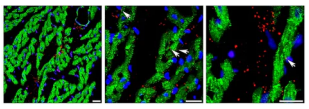
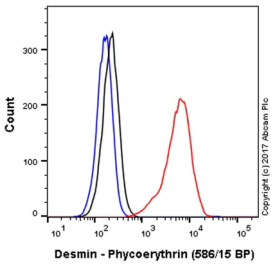


Image from Cowan DB et al. Intracoronary Delivery of Mitochondria to the Ischemic Heart for Cardioprotection. PLoS One 11:e0160889 (2016).

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

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).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32362).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-Desmin antibody [Y66] - Low endotoxin, Azide free (ab216616)

Clone Y66 (ab216616) has been successfully conjugated by Abcam. This image was generated using Anti-Desmin antibody [Y66] - Cytoskeleton Marker (PE). Please refer to ab224935 for protocol details.
Overlay histogram showing SV40LT-SMC cells stained with ab224935 (red line). The cells were fixed with 4% formaldehyde (10 min) and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS / 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (ab224935, 1/1000 dilution) for 30 min at 22°C.

Isotype control antibody (black line) was Rabbit IgG (monoclonal) Phycoerythrin (ab209478) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5,000 events were collected using a 50 mW Yellow/Green laser (561nm) and 586/15 bandpass filter.

This antibody gave a positive signal in SV40LT-SMC cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Triton X-100 for 15 min used under the same conditions.

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