abcam

ab240983

Anti-smooth muscle Myosin heavy chain 11 antibody [SP314] - BSA and Azide free

Recombinant | RabMAb | Advanced Validation

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	SP314
Purification technique	Affinity purification Protein A/G
Concentration	0.997 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from TCS by protein A/G.

Reactivity data

IHC-P

Tested

Species	Human

Dilution info	-
Notes	Perform heat mediated antigen retrieval with EDTA buffer pH 8.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	-
Notes	Perform heat mediated antigen retrieval with EDTA buffer pH 8.0 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	-
Notes	Perform heat mediated antigen retrieval with EDTA buffer pH 8.0 before commencing with IHC staining protocol.

IHC-Fr

Tested

Species	Mouse, Rat
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

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

mIHC

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

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

Target data

See full target information MYH11

Function	Muscle contraction.

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

ab240983 is the carrier-free version of ab224804.

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.

Supplementary info

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

Activity summary	Smooth muscle Myosin heavy chain 11 also known as MYH11 or myosin 11 is a protein that plays a mechanical role in muscle contraction. It forms part of the thick filament in smooth muscle cells. MYH11 has a molecular mass of approximately 227 kDa and is expressed in smooth muscle tissues including the walls of blood vessels the gastrointestinal tract and the respiratory system. As a member of the myosin heavy chain family it functions by interacting with actin filaments to facilitate contraction allowing for the maintenance and regulation of vascular tone and organ motility.
Biological function summary	Smooth muscle Myosin heavy chain 11 contributes to muscle function through its role within myofilament complexes. These complexes enable cells to achieve the force generation necessary for muscle contraction. MYH11 is critical to cytoskeletal maintenance and cell movement especially in the smooth muscles that line the visceral organs and blood vessels. Without proper functioning of MYH11 cells may lose structural stability and functionality leading to impaired muscle contraction and vessel elasticity.
Pathways	Smooth muscle Myosin heavy chain 11 engages intimately with signal transduction processes governing muscle contraction and relaxation. MYH11 acts in the RhoA/ROCK signaling pathway which is vital to the regulation of vascular smooth muscle contraction. Within this pathway MYH11 influences the activity of proteins like myosin light chain kinase and phosphatase. The protein also plays a role in actin-myosin complex dynamics through its interaction with cellular elements such as tropomyosin and caldesmon significantly impacting cellular processes like cell proliferation and migration.

Associated diseases and disorders	Smooth muscle Myosin heavy chain 11 has significant correlations with conditions such as familial thoracic aortic aneurysm and aortic dissection types. Mutations or dysfunctions in MYH11 have a direct impact on the integrity of the aortic wall which can lead to these severe vascular conditions. Additionally MYH11 has associations with hypertension through its involvement in vascular tension regulation. The protein's malfunction may disturb its interactions with other myosin heavy chain family members exacerbating vascular risk factors.

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

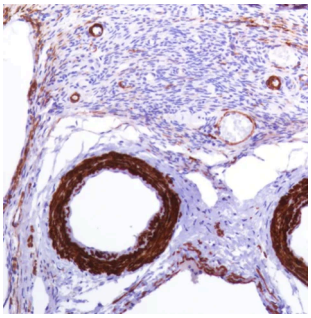
We do not recommend this combination. It is not covered by our product promise.

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.

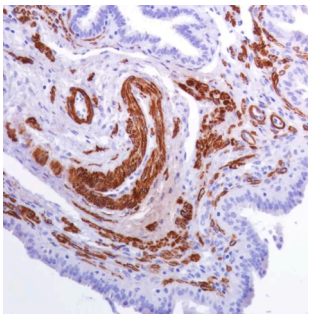
10 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-smooth muscle Myosin heavy chain 11 antibody [SP314] - BSA and Azide free (ab240983)

Smooth muscle Myosin heavy chain 11 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-smooth muscle Myosin heavy chain 11 antibody

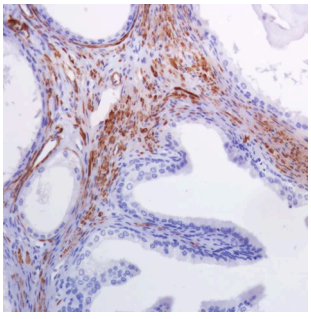
Formalin-fixed, paraffin-embedded human ovary tissue stained for smooth muscle Myosin heavy chain 11 using ab224804 at 1/100 dilution in immunohistochemical analysis.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA and sodium azide (ab224804).



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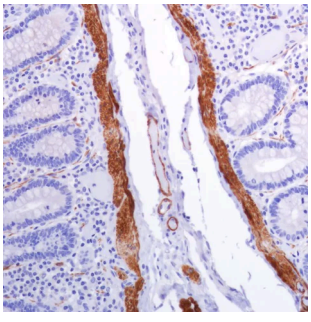
Formalin-fixed, paraffin-embedded human fallopian tube tissue stained for smooth muscle Myosin heavy chain 11 using ab224804 at 1/100 dilution in immunohistochemical analysis.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA and sodium azide (ab224804).



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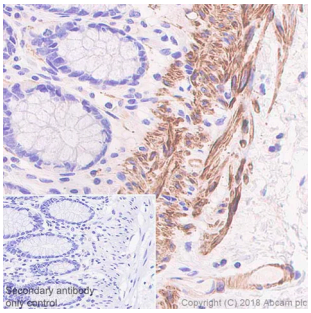
Formalin-fixed, paraffin-embedded human prostate tissue stained for smooth muscle Myosin heavy chain 11 using ab224804 at 1/100 dilution in immunohistochemical analysis.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA and sodium azide (ab224804).



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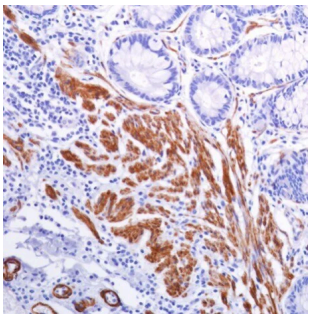
Formalin-fixed, paraffin-embedded human small intestine tissue stained for smooth muscle Myosin heavy chain 11 using ab224804 at 1/100 dilution in immunohistochemical analysis.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA and sodium azide (ab224804).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-smooth muscle Myosin heavy chain 11 antibody [SP314] - BSA and Azide free (ab240983)

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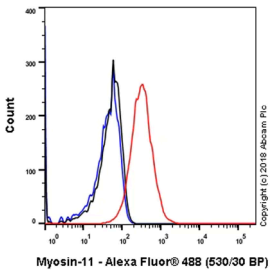
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human colon tissue sections labeling smooth muscle Myosin heavy chain 11 with ab224804 at 1/100 dilution (1.34 µg/ml). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 10mins. Goat Anti-Rabbit & Mouse IgG (HRP) was used as the secondary antibody. Hematoxylin was used as a counterstain. Positive staining on the smooth muscle cells in human colon, performed on a Leica Biosystems BOND™ RX instrument.
The section was incubated with ab224804 for 10 mins at room temperature.
This image was generated using ab224804, the same clone, but with a different buffer formulation.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-smooth muscle Myosin heavy chain 11 antibody [SP314] - BSA and Azide free (ab240983)

Smooth muscle Myosin heavy chain 11 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-smooth muscle Myosin heavy chain 11 antibody

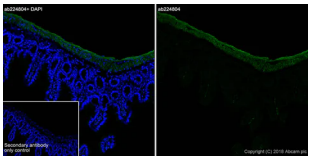
Formalin-fixed, paraffin-embedded human colon tissue stained for smooth muscle Myosin heavy chain 11 using ab224804 at 1/100 dilution in immunohistochemical analysis.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA and sodium azide (ab224804).



Flow Cytometry (Intracellular) - Anti-smooth muscle Myosin heavy chain 11 antibody [SP314] - BSA and Azide free (ab240983)

Smooth muscle Myosin heavy chain 11 Flow Cytometry (Intracellular) staining using rabbit Anti-smooth muscle Myosin heavy chain 11 antibody

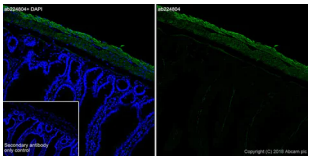
Intracellular Flow Cytometry analysis of C2C12 (Mouse myoblasts myoblast) labeling smooth muscle Myosin heavy chain 11 with purified ab224804 at 1/80 dilution (1.12µg/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as a secondary antibody. Isotype control - Rabbit monoclonal IgG (ab172730) / Black. Unlabeled control -Unlabelled cells / blue. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab224804).



Immunohistochemistry (Frozen sections) - Anti-smooth muscle Myosin heavy chain 11 antibody [SP314] - BSA and Azide free (ab240983)

Smooth muscle Myosin heavy chain 11 Immunohistochemistry (Frozen sections) staining using rabbit Anti-smooth muscle Myosin heavy chain 11 antibody

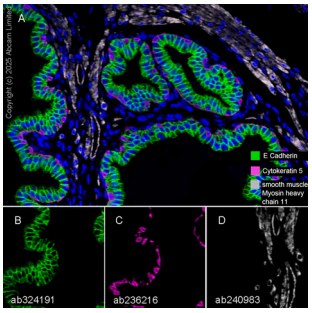
Immunohistochemistry (Frozen) analysis of mouse small intestine tissue section labeling smooth muscle Myosin heavy chain 11 with purified ab224804 at 1/500 (1.8 µg/ml). Sections were fixed in 4% paraformaldehyde and permeabilized with 0.2% Triton X-100. Antigen retrieval was Heat mediated antigen retrieval using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 (2 µg/ml) dilution. DAPI was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab224804).



Immunohistochemistry (Frozen sections) - Anti-smooth muscle Myosin heavy chain 11 antibody [SP314] - BSA and Azide free (ab240983)

Smooth muscle Myosin heavy chain 11 Immunohistochemistry (Frozen sections) staining using rabbit Anti-smooth muscle Myosin heavy chain 11 antibody

Immunohistochemistry (Frozen) analysis of rat small intestine tissue section labeling smooth muscle Myosin heavy chain 11 with purified ab224804 at 1/500 (1.8 µg/ml). Sections were fixed in 4% paraformaldehyde and permeabilized with 0.2% Triton X-100. Antigen retrieval was Heat mediated antigen retrieval using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 (2 µg/ml) dilution. DAPI was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab224804).



Multiplex immunohistochemistry - Anti-smooth muscle Myosin heavy chain 11 antibody [SP314] - BSA and Azide free (ab240983)

Smooth muscle Myosin heavy chain 11 Multiplex immunohistochemistry staining of Mouse Prostate tissue using rabbit Anti-smooth muscle Myosin heavy chain 11 antibody

Immunohistochemistry analysis of Formalin/PFA-fixed paraffin-embedded sections Mouse Prostate tissue labelling E Cadherin with ab324191 at 1:500 dilution (B), Cytokeratin 5 with ab236216 at 1:1500 dilution (C) and smooth muscle Myosin heavy chain 11 with ab240983 at 1:4000 dilution (D). Opal Polymer HRP Ms + Rb was used as a secondary antibody, and DAPI was used for a nuclear counter stain. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

Panel A: merged staining of anti-E Cadherin (green; Opal™690), anti-Cytokeratin 5 (magenta; Opal™520) and anti-smooth muscle Myosin heavy chain 11 (gray; Opal™570) on mouse prostate.

Panel B: anti-E Cadherin staining epithelium in mouse prostate.

Panel C: ant-Cytokeratin 5 staining basal cells in mouse prostate.

Panel D: ant-smooth muscle Myosin heavy chain 11 staining smooth muscle in mouse prostate.

Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab324191, ab236216 and ab240983 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

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