abcam

ab202295

Alexa Fluor® 488 Anti-alpha smooth muscle Actin antibody [EPR5368]

Anti-alpha smooth muscle Actin antibody [EPR5368] - Alexa Fluor® 488 conjugated (ab202295) is a rabbit recombinant monoclonal antibody detecting alpha smooth muscle Actin in **ICC/IF**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 488
Excitation/Emission	Ex: 495nm, Em: 519nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR5368
Purification technique	Affinity purification Protein A
Dissociation constant	2.2×10^{-11} M
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	This product gave a positive signal in SV40LT-SMC, A673 and HeLa cells fixed with 4% formaldehyde (10 min) and 100% methanol (5 min)

Species	Mouse
Dilution info	-
Notes	-

Species	Rat
Dilution info	1/200
Notes	-

Flow Cyt (Intra)

Expected

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

IHC-P

Expected

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

Target data

See full target information ACTA2

Function	Actins are highly conserved proteins that are involved in various types of cell motility and are ubiquitously expressed in all eukaryotic cells.

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, Store in the dark

Notes

What is this antibody validated in?
Alexa Fluor® 488 Anti-alpha smooth muscle Actin antibody [EPR5368] (ab202295) is a rabbit recombinant monoclonal antibody and is validated for use in Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

Related products
Antibody clone EPR5368 is also available pre-conjugated to a variety of labels for your convenience – Anti-alpha smooth muscle Actin Alexa Fluor® 488 [EPR5368] (ab202295).

Specificity confirmed
The specificity of Alexa Fluor® 488 Anti-alpha smooth muscle Actin antibody [EPR5368] (ab202295) has been confirmed by Immunocytochemistry testing in ACTA2 Knockout HeLa cells.

Other related products
We have a range of other formats of antibody clone [EPR5368] also available for your convenience: ab124964, Alexa Fluor® 488 - ab202295, Alexa Fluor® 647 - ab202296, Alexa Fluor® 555 - ab202509, Alexa Fluor® 594 - ab202510, PE - ab208844, Carrier free - ab220795, APC - ab225143, ab284414, Alexa Fluor® 790 - ab309335, ab320058, Carrier free - ab320059, ab321866, Carrier free - ab322917

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.

Supplementary info

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

Activity summary	Alpha smooth muscle actin (α-SMA) also known as ACTA2 is an actin isoform with a specific role in the contractile function of smooth muscle cells. The molecular weight of α-SMA is approximately 42 kDa. This protein is expressed widely in vascular smooth muscle cells the peritoneal lining and myofibroblasts. It often serves as a marker for these cell types. The expression of α-SMA is critical for the mechanical attributes of cells contributing to the rigidity and contractility of tissues where it is present.
Biological function summary	Alpha smooth muscle actin aids in maintaining the structural integrity of tissues by forming part of the actin cytoskeleton an important element in cellular support. It exists in high concentration in stress fibers contributing to cellular movements and shape maintenance. These actions are essential in various dynamic cellular processes such as cell migration and adhesion. Alpha smooth muscle actin does not typically form complexes but it associates with other components of the actin cytoskeleton to ensure cell stability and function.
Pathways	Alpha smooth muscle actin functions significantly within the TGF-beta signaling pathway which influences cell proliferation differentiation and apoptosis. It interacts closely with proteins such as myosin to facilitate cellular contractility and motility. Additionally α-SMA plays a part in the RhoA/Rho kinase (ROCK) pathway connecting with regulators of actin filament organization. These pathways are essential for modulation of smooth muscle contraction and actin filament assembly contributing to vascular development and wound healing.
Associated diseases and disorders	Alpha smooth muscle actin is importantly involved in fibrotic diseases and vascular diseases like arteriosclerosis. Increased expression of α-SMA is often observed in fibrotic tissues contributing to pathogenesis due to excessive extracellular matrix deposition. In the context of vascular disorders overexpression of α-SMA can lead to abnormal vascular remodeling often seen in diseases like hypertension. Interactions with proteins such as fibronectin and collagens facilitate these pathological changes highlighting the importance of α-SMA in disease development.

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.

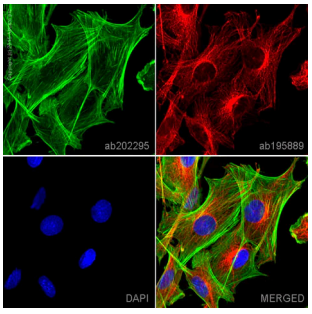
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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3 product images

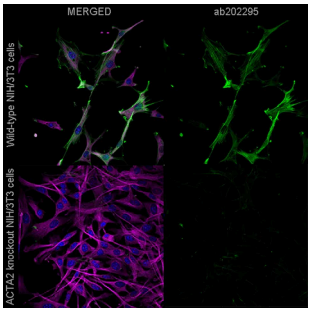


Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 488 Anti-alpha smooth muscle Actin antibody [EPR5368] (ab202295)

Alpha smooth muscle Actin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-alpha smooth muscle Actin antibody

ab202295 staining alpha smooth muscle Actin in SV40LT-SMC 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 ab at a 1/100 dilution (shown in green) and ab195889, Mouse monoclonal to alpha Tubulin (Alexa Fluor® 594), at a 1/250 dilution (shown in red). 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 SV40LT-SMC cells fixed with 100% methanol (5 min)

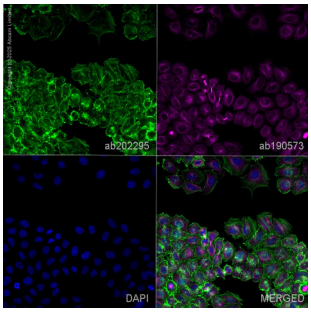


Immunocytochemistry - Alexa Fluor® 488 Anti-alpha smooth muscle Actin antibody [EPR5368] (ab202295)

Alpha smooth muscle Actin Immunocytochemistry staining using rabbit Anti-alpha smooth muscle Actin antibody

ab202295 staining alpha smooth muscle Actin (ACTA2) in wild-type NIH/3T3 cells (top panel) and ACTA2 knockout NIH/3T3 cells (bottom panel). The cells were fixed with 100% methanol (5 min) then 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 with ab202295 at at 5µg/ml (shown in green) and ab190573, Rabbit monoclonal [EP1332Y] to alpha Tubulin 4 - Microtubule Marker (Alexa Fluor® 647), pre-adsorbed at 1/250 dilution (shown in magenta) dilution, overnight at 4°C. Nuclear DNA was labelled in blue 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.



Immunocytochemistry - Alexa Fluor® 488 Anti-alpha smooth muscle Actin antibody [EPR5368] (ab202295)

Alpha smooth muscle Actin Immunocytochemistry staining of HeLa cells using rabbit Anti-alpha smooth muscle Actin antibody

ab202295 staining staining alpha smooth muscle Actin (ACTA2) in HeLa cells. The cells were fixed with 4% paraformaldehyde (10 min), permeabilized with 0.1% PBS-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 ab202295 at 5µg/ml (shown in green) and ab190573, Rabbit monoclonal [EP1332Y] to alpha Tubulin 4 - Microtubule Marker (Alexa Fluor® 647), pre-adsorbed at 1/250 dilution (shown in magenta). Nuclear DNA was labelled with DAPI (shown in blue).

Also suitable in cells fixed with 100% methanol (5 min).

Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a maximum intensity projection of confocal sections is shown.

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