abcam

ab202509

Alexa Fluor® 555 Anti-alpha smooth muscle Actin antibody [EPR5368]

Anti-alpha smooth muscle Actin antibody [EPR5368] - Alexa Fluor® 555 conjugated (ab202509) is a rabbit recombinant monoclonal antibody detecting alpha smooth muscle Actin in **ICC/IF, mIHC**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Multiplex IHC validated on the Leica BOND® MAX using Opal reagents
- Biophysical QC for unrivalled batch-batch consistency
- Over 10 publications

Recombinant | RabMAb | Advanced Validation | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 555
Excitation/Emission	Ex: 555nm, Em: 565nm
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

mIHC

Tested

Species	Human
Dilution info	1/100
Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	1/200
Notes	This product gave a positive signal in SV40LT-SMC cells fixed with 4% formaldehyde (10 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® 555 Anti-alpha smooth muscle Actin antibody [EPR5368] (ab202509) is a rabbit recombinant monoclonal antibody and is validated for use in Immunocytochemistry/immunofluorescence (ICC/IF), Multiplex IHC (mIHC) in

Human, Mouse, Rat samples.

Trusted by the scientific community
Anti-alpha smooth muscle Actin [EPR5368] Alexa Fluor® 555 (ab202509) was first used in a scientific publication in 2015 and has been cited over 10 times in peer-reviewed journals.

Reviewed by scientists
Anti-alpha smooth muscle Actin [EPR5368] Alexa Fluor® 555 (ab202509) has over 5 independent reviews from customers.

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® 555 [EPR5368] (ab202509).

Specificity confirmed
The specificity of Alexa Fluor® 555 Anti-alpha smooth muscle Actin antibody [EPR5368] (ab202509) 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.

Alexa Fluor® is a registered trademark of Molecular Probes, Inc, a Thermo Fisher Scientific Company. The Alexa Fluor® dye included in this product is provided under an intellectual property license from Life Technologies Corporation. As this product contains the Alexa Fluor® dye, the purchase of this product conveys to the buyer the non-transferable right to use the purchased product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). As this product contains the Alexa Fluor® dye the sale of this product is expressly conditioned on the buyer not using the product or its components, or any materials made using the product or its components, in any activity to generate revenue, which may include, but is not limited to use of the product or its components: in manufacturing; (ii) to provide a service, information, or data in return for payment (iii) for therapeutic, diagnostic or prophylactic purposes; or (iv) for resale, regardless of whether they are sold for use in research. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, 5781 Van Allen Way, Carlsbad, CA 92008 USA or outlicensing@thermofisher.com.

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

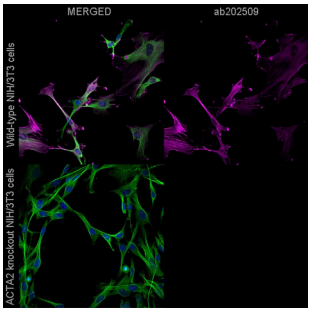
We do not recommend this combination. It is not covered by our product promise.

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.

3 product images

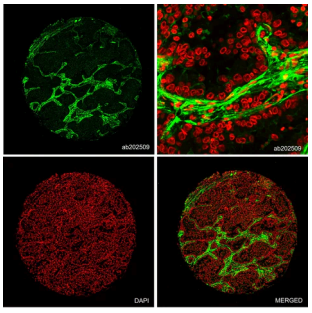


Immunocytochemistry - Alexa Fluor® 555 Anti-alpha smooth muscle Actin antibody [EPR5368] (ab202509)

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

ab202509 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 ab202509 at at 5µg/ml (shown in magenta) and ab190573, Rabbit monoclonal [EP1332Y] to alpha Tubulin 4 - Microtubule Marker (Alexa Fluor® 647), pre-adsorbed at 1/250 dilution (shown in green) dilution, overnight at 4°C. Nuclear DNA was labelled in blue with DAPI (shown in blue).

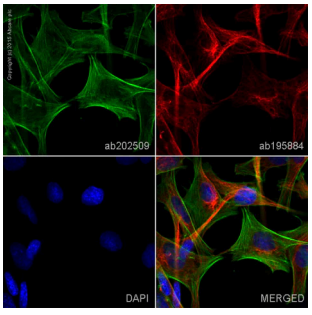
Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a maximum intensity projection of confocal sections is shown.



Multiplex immunohistochemistry - Alexa Fluor® 555 Anti-alpha smooth muscle Actin antibody [EPR5368] (ab202509)

Immunofluorescence analysis of human lung adenocarcinoma labelled with ab202509. Image was acquired using Cell DIVE Multiplexed Imaging Solution (Leica Microsystems).

Formalin fixed paraffin embedded (FFPE) sections were incubated with ab202509 at 1/100 dilution, for 1h at room temperature. Nuclear DNA was labelled with DAPI (Red). Deparaffinization, antigen retrieval, biomarker labeling and imaging was performed following Cell DIVE recommended standard protocol. Cell DIVE automatically processed the image to perform autofluorescence removal, distortion correction, blank glass subtraction, flat-field correction, and stitching.



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 555 Anti-alpha smooth muscle Actin antibody [EPR5368] (ab202509)

ab202509 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 ab202509 at 1/200 dilution (shown in green) and ab195884, Rat monoclonal to Tubulin (Alexa Fluor® 647), at 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).

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