


Product datasheet

Anti-alpha smooth muscle Actin antibody [1A4] - BSA and Azide free ab240654

KO VALIDATED Recombinant

★★★★★ [2 Abreviews](#) [3 References](#) [7 Images](#)

Overview

Product name	Anti-alpha smooth muscle Actin antibody [1A4] - BSA and Azide free
Description	Mouse monoclonal [1A4] to alpha smooth muscle Actin - BSA and Azide free
Host species	Mouse
Tested applications	Suitable for: WB, IHC-P, ICC/IF, Flow Cyt (Intra)
Species reactivity	Reacts with: Mouse, Rat, Human Predicted to work with: Sheep, Rabbit, Cow, Pig, Mammals, Baboon 
Immunogen	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
Positive control	ICC/IF: NIH-3T3 (mouse embryonic fibroblast) cells IHC: Human colon, Mouse colon, Rat colon WB: NIH-3T3 (mouse embryonic fibroblast) whole cell lysate, IMR-90 (human lung fibroblast) whole cell lysate
General notes	<p>This product has switched to a recombinant production method on 15th September 2021. ab240654 is the carrier-free version of ab7817.</p> <p>This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com.</p> <p>Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. The carrier-free buffer and high concentration allow for increased conjugation efficiency.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies</p>

and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.

If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at +4°C. Do Not Freeze.
Storage buffer	pH: 7.20 Constituent: PBS
Carrier free	Yes
Purity	Protein A purified
Clonality	Monoclonal
Clone number	1A4
Isotype	IgG2a
Light chain type	kappa

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab240654 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		1/1000. Detects a band of approximately 42 kDa (predicted molecular weight: 42 kDa).
IHC-P	★★★★★ (1)	1/50000. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.
ICC/IF		1/50. Not recommended for Human.
Flow Cyt (Intra)		Use a concentration of 1.137 µg/ml.

Target

Function	Actins are highly conserved proteins that are involved in various types of cell motility and are ubiquitously expressed in all eukaryotic cells.
Involvement in disease	Defects in ACTA2 are the cause of aortic aneurysm familial thoracic type 6 (AAT6) [MIM:611788]. AATs are characterized by permanent dilation of the thoracic aorta usually due to degenerative changes in the aortic wall. They are primarily associated with a characteristic histologic appearance known as 'medial necrosis' or 'Erdheim cystic medial necrosis' in which there is

degeneration and fragmentation of elastic fibers, loss of smooth muscle cells, and an accumulation of basophilic ground substance.

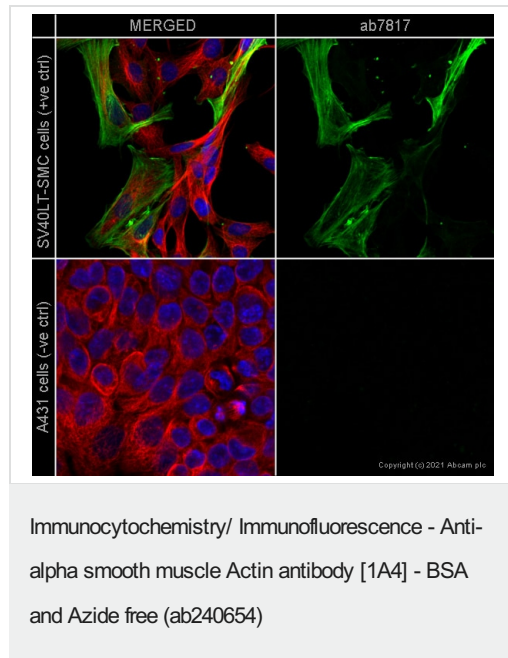
Sequence similarities

Belongs to the actin family.

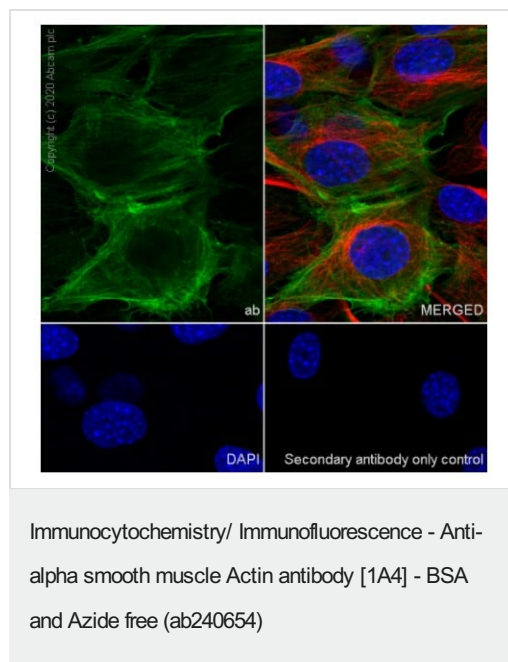
Cellular localization

Cytoplasm > cytoskeleton.

Images



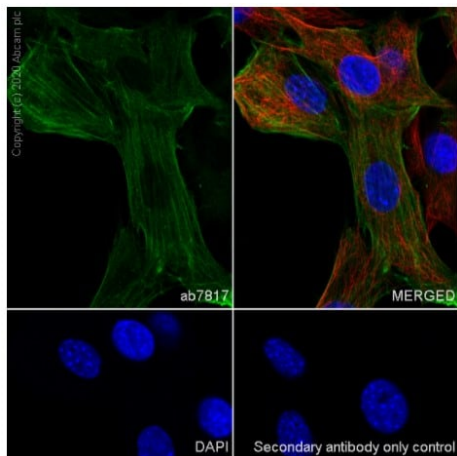
This data was developed using the same antibody clone in a different buffer formulation (**ab7817**). **ab7817** staining alpha smooth muscle Actin in SV40LT-SMC cells (positive control, top panel) and A431 cells (negative control, bottom panel). The cells were fixed with 100% methanol (5 min) then permeabilized 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 **ab7817** at 1 µg/ml concentration and **ab6046** (Rabbit polyclonal to beta Tubulin) at 1/1000 dilution overnight at 4°C followed by a further incubation at room temperature for 1h with a goat secondary antibody to mouse IgG (Alexa Fluor® 488) (**ab150117**) at 2 µg/ml (shown in green) and a goat secondary antibody to rabbit IgG (Alexa Fluor® 594) (**ab150080**) at 2 µg/ml (shown in red). Nuclear DNA was labelled in blue with DAPI. Image was taken with a confocal microscope (Leica-Microsystems TCS SP8).



This data was developed using **ab7817**, the same antibody clone in a different buffer formulation.

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized NIH 3T3 cells labelling alpha smooth muscle Actin with **ab7817** at 1/50 dilution (Green). Confocal image showing cytoskeleton staining in NIH 3T3 cells. **ab150113** Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed was used as a secondary at 1/10 dilution. **ab179513** Anti-beta Tubulin rabbit monoclonal antibody was used to counterstain tubulin at 1/20 dilution, followed by **ab150080** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at 1/50 dilution (Red). The Nuclear counterstain was DAPI (Blue).

Negative control: secondary counterstain antibody only control.

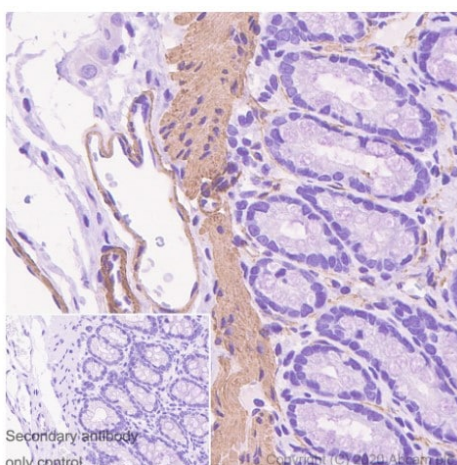


Immunocytochemistry/ Immunofluorescence - Anti-alpha smooth muscle Actin antibody [1A4] - BSA and Azide free (ab240654)

This data was developed using **ab7817**, the same antibody clone in a different buffer formulation.

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized NIH 3T3 cells labelling alpha smooth muscle Actin with **ab7817** at 1/50 dilution (Green). Confocal image showing cytoskeleton staining in NIH 3T3 cells. **ab150113** Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed was used as a secondary at 1/10 dilution. **ab179513** Anti-beta Tubulin rabbit monoclonal antibody was used to counterstain tubulin at 1/20 dilution, followed by **ab150080** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at 1/50 dilution (Red). The Nuclear counterstain was DAPI (Blue).

Negative control: secondary counterstain antibody only control.

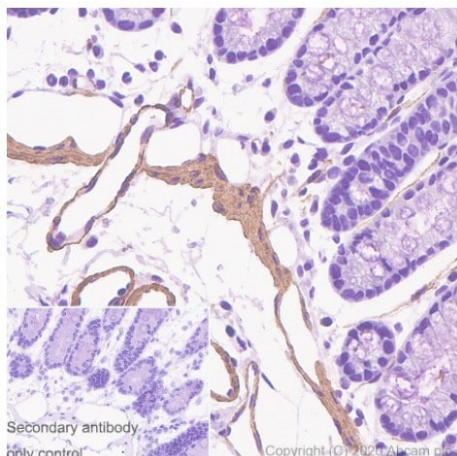


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha smooth muscle Actin antibody [1A4] - BSA and Azide free (ab240654)

Immunohistochemical analysis of Rat colon tissue labelling alpha smooth muscle Actin with **ab7817** at 1/50000 dilution and ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) Secondary antibody. Positive cytoplasmic staining on Rat colon tissue is observed. Counterstained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody was ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

This image is produced using the same clone but in a different formulation **ab7817**.

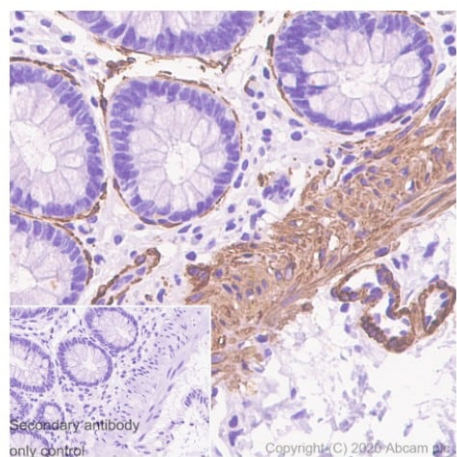


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha smooth muscle Actin antibody [1A4] - BSA and Azide free (ab240654)

Immunohistochemical analysis of Mouse colon tissue labelling alpha smooth muscle Actin with **ab7817** at 1/50000 dilution and ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) Secondary antibody. Positive cytoplasmic staining on Mouse colon tissue is observed. Counterstained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody was ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

This image is produced using the same clone but in a different formulation **ab7817**.

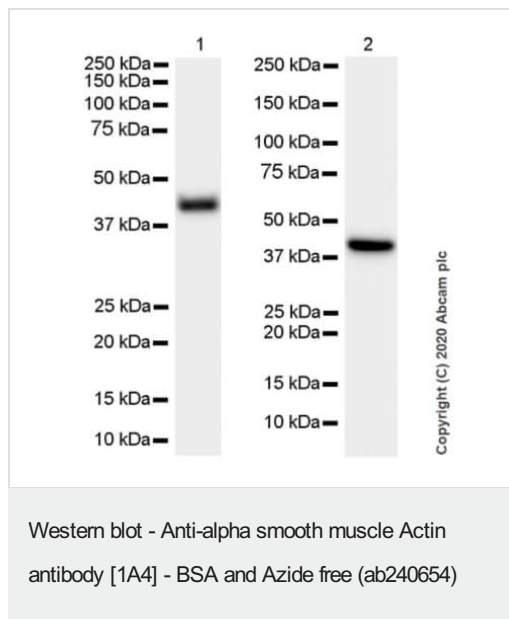


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha smooth muscle Actin antibody [1A4] - BSA and Azide free (ab240654)

Immunohistochemical analysis of Human colon tissue labelling alpha smooth muscle Actin with **ab7817** at 1/50000 dilution and ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) Secondary antibody. Positive cytoplasmic staining on Human colon tissue is observed. Counterstained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody was ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

This image is produced using the same clone but in a different formulation **ab7817**.



All lanes : Anti-alpha smooth muscle Actin antibody [1A4] (**ab7817**) at 1/1000 dilution

Lane 1 : NIH 3T3 (mouse embryonic fibroblast) whole cell lysate with NFDm/TBST

Lane 2 : IMR-90 (human lung fibroblast), whole cell lysate with NFDm/TBST

Lysates/proteins at 20 µg per lane.

Blocking peptides at 5 % per lane.

Secondary

All lanes : Peroxidase-Conjugated Goat anti-Mouse IgG (H+L) at 1/10000 dilution

Predicted band size: 42 kDa

Observed band size: 42 kDa

This image is produced using the same clone but in a different formulation **ab7817**.

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