# Anti-alpha smooth muscle Actin antibody [E184]

**Product name:** Anti-alpha smooth muscle Actin antibody [E184]  
**Description:** Rabbit monoclonal [E184] to alpha smooth muscle Actin  
**Host species:** Rabbit  
**Specificity:** This antibody only detects actin in smooth muscle in immunohistochemistry.  
**Tested applications:** Suitable for: IHC-FrFrFl, IHC-Fr, WB, IHC-P, Flow Cyt, ICC/IF  
**Unsuitable for:** IP  
**Species reactivity:** Reacts with: Mouse, Rat, Human  
**Immunogen:** Synthetic peptide within Human alpha smooth muscle Actin aa 1-100 (N terminal). The exact sequence is proprietary.  
   Database link: P62736  
   (Peptide available as ab211918)  
**Positive control:** WB: A431, HeLa, C6, RAW264.7, PC-12, NIH/3T3 and MCF7 cell lysates. IHC-P: Human uterus, human smooth muscle and mouse smooth muscle tissues. Flow Cyt: HeLa cells. ICC/IF: A431, C6, NIH/3T3 cells.  
**General notes:** Abcam recommended secondaries - Goat Anti-Rabbit HRP (ab205718) and Goat Anti-Rabbit Alexa Fluor® 488 (ab150077).  
   See other anti-rabbit secondary antibodies that can be used with this antibody.  
   Our RabMab® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMab® patents.  
   **We are constantly working hard to ensure we provide our customers with best in class antibodies. As a result of this work we are pleased to now offer this antibody in purified format. We are in the process of updating our datasheets. The purified format is designated 'PUR' on our product labels. If you have any questions regarding this update, please contact our Scientific Support team.**  
   This product is a recombinant rabbit monoclonal antibody.

## Properties
Form: Liquid


Storage buffer: pH: 7.20
Preservative: 0.01% Sodium azide
Constituents: PBS, 40% Glycerol, 0.05% BSA

Purity: Protein A purified

Clonality: Monoclonal

Clone number: E184

Isotype: IgG

Applications:

Our Abpromise guarantee covers the use of ab32575 in the following tested applications.

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

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>IHC-FrFl</td>
<td></td>
<td>Use at an assay dependent concentration. PubMed: 24647450</td>
</tr>
<tr>
<td>IHC-Fr</td>
<td></td>
<td>1/100</td>
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<tr>
<td>IF</td>
<td></td>
<td>Use at an assay dependent concentration. PubMed: 28138565</td>
</tr>
<tr>
<td>WB</td>
<td>4/5/5/5</td>
<td>1/1000 - 1/5000. Detects a band of approximately 42 kDa (predicted molecular weight: 42 kDa). Can be blocked with Human alpha smooth muscle Actin peptide (ab211918).</td>
</tr>
<tr>
<td>Flow Cyt</td>
<td>1/20</td>
<td>ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.</td>
</tr>
<tr>
<td>ICC/IF</td>
<td>1/500</td>
<td></td>
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Application notes: Is unsuitable for IP.

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human smooth muscle tissue labeling alpha smooth muscle Actin with purified ab32575 at a dilution of 1/200. Heat mediated antigen retrieval was performed using EDTA buffer pH 9. ab97051, an 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.

Immunocytochemistry/Immunofluorescence analysis of NIH/3T3 (Mouse embryonic fibroblast) cells labeling alpha smooth muscle Actin with purified ab32575 at 1/500 dilution (5.2 µg/ml). Cells were fixed in 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. Cells were counterstained with Ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1/200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 dilution (2 µg/ml) dilution. DAPI was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.
Immunocytochemistry/ Immunofluorescence analysis of C6(Rat glial tumor glial cell) cells labeling alpha smooth muscle Actin with purified ab32575 at 1/100 dilution (0.71 µg/ml). Cells were fixed in 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. Cells were counterstained with Ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1/200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 dilution (2 µg/ml) dilution. DAPI was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.

FoxA1 (red) and alpha smooth muscle actin (green) staining are shown by indirect immunofluorescence on sections of prostate from mice of the indicated genotypes.

Wild type: 21 weeks, Tgfbr2+/–: 44 weeks, Pten+/–: 21 weeks, Pten+/–; Tgfbr2+/–: 11 weeks, Apc+/–: 36 weeks, and Apc+/–; Tgfbr2+/–: 24 weeks old.

IF images were captured on an Olympus BX51 microscope and DP70 digital camera, or on a Nikon Eclipse Ni-U and captured with a DS-Qi1 camera with NIS Elements software.
Immunocytochemistry/Immunofluorescence analysis of A431 (human epidermoid carcinoma) cells labeling alpha smooth muscle Actin (green) with purified ab32575 at 1/500. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150077, Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody. Cells were counterstained with ab7291, anti-Tubulin (mouse mAb) at 1/1000 followed by ab150120 Alexa Fluor® 594 goat anti-mouse secondary (1/1000). Nuclei were counterstained with DAPI (blue).

For negative control 1, rabbit primary antibody and anti-mouse secondary antibody (ab150120) were used. For negative control 2, ab7291 (mouse primary antibody) was used followed by anti-rabbit secondary antibody (ab150077).

**All lanes**: Anti-alpha smooth muscle Actin antibody [E184] (ab32575) at 1/5000 dilution (purified)

**Lane 1**: C6 (Rat glial tumor cell line) whole cell lysate  
**Lane 2**: RAW 264.7 (Mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate  
**Lane 3**: PC-12 (Rat adrenal gland pheochromocytoma cell line) whole cell lysate  
**Lane 4**: NIH/3T3 (Mouse embryo fibroblast cell line) whole cell lysate

Lysates/proteins at 20 µg per lane.

**Secondary**  
**All lanes**: Peroxidase-conjugated goat anti-rabbit IgG (H+L) at 1/1000 dilution

**Predicted band size**: 42 kDa  
**Observed band size**: 42 kDa
**Blocking and dilution buffer:** 5% NFDM/TBST

Flow Cytometry analysis of HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling alpha smooth muscle Actin with purified ab32575 at a dilution of 1/20 (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 - Unlabeled control, cells without incubation with primary and secondary antibodies.

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**All lanes** : Anti-alpha smooth muscle Actin antibody [E184] (ab32575) at 1/5000 dilution (purified)

**Lane 1** : A431 (Human epidermoid carcinoma cell line) whole cell lysate  
**Lane 2** : HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate  
**Lane 3** : MCF7 (Human breast adenocarcinoma cell line) whole cell lysate

Lysates/proteins at 20 µg per lane.

**Secondary**

**All lanes** : Peroxidase-conjugated goat anti-rabbit IgG (H+L) at 1/1000 dilution

**Predicted band size:** 42 kDa  
**Observed band size:** 42 kDa

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**Blocking and dilution buffer:** 5% NFDM/TBST
Unpurified ab32575 staining alpha smooth muscle actin in human kidney tumour sections by Immunohistochemistry (IHC-Fr - frozen sections). Tissue was fixed with acetone and blocked with 10% serum for 20 minutes at 21°C. Samples were incubated with primary antibody (1/100 in TBS + 2% BSA + 0.02% sodium azide) for 1 hour at 21°C. An undiluted HRP-conjugated Goat anti-rabbit polyclonal was used as the secondary antibody.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse smooth muscle tissue labeling alpha smooth muscle Actin with purified ab32575 at a dilution of 1/200. Heat mediated antigen retrieval was performed using EDTA buffer pH 9. ab97051, an 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.

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