

# alpha smooth muscle Actin Rabbit pAb

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Catalog # AP50857

## Product Information

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<b>Application</b>	WB, IHC-P, IHC-F, IF
<b>Primary Accession</b>	<a href="#">P62736</a>
<b>Reactivity</b>	Human, Mouse, Rat
<b>Predicted</b>	Rabbit
<b>Host</b>	Rabbit
<b>Clonality</b>	Polyclonal
<b>Calculated MW</b>	42009
<b>Physical State</b>	Liquid
<b>Immunogen</b>	KLH conjugated synthetic peptide derived from human Actin alpha
<b>Epitope Specificity</b>	301-375/375
<b>Isotype</b>	IgG
<b>Purity</b>	affinity purified by Protein A
<b>Buffer</b>	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
<b>SUBCELLULAR LOCATION</b>	Cytoplasm, cytoskeleton.
<b>SIMILARITY</b>	Belongs to the actin family.
<b>SUBUNIT</b>	Polymerization of globular actin (G-actin) leads to a structural filament (F-actin) in the form of a two-stranded helix. Each actin can bind to 4 others.
<b>Post-translational modifications</b>	Oxidation of Met-46 by MICALs (MICAL1, MICAL2 or MICAL3) to form methionine sulfoxide promotes actin filament depolymerization. Methionine sulfoxide is produced stereospecifically, but it is not known whether the (S)-S-oxide or the (R)-S-oxide is produced (By similarity).
<b>DISEASE</b>	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.
<b>Important Note</b>	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
<b>Background Descriptions</b>	All eukaryotic cells express Actin, which often constitutes as much as 50% of total cellular protein. Actin filaments can form both stable and labile structures and are crucial components of microvilli and the contractile apparatus of muscle cells. While lower eukaryotes, such as yeast, have only one Actin gene, higher eukaryotes have several isoforms encoded by a family of genes. At least six types of Actin are present in mammalian tissues and fall into three classes. alpha-Actin expression is limited to various types of muscle, whereas beta- and gamma-Actin are the principle constituents of filaments in other tissues. Members of the small GTPase family regulate the organization of the Actin cytoskeleton. Rho controls the assembly of Actin stress fibers and focal adhesion. Rac regulates Actin filament accumulation at the plasma membrane. Cdc42 stimulates formation of filopodia.

## Additional Information

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<b>Gene ID</b>	59
<b>Other Names</b>	Actin, aortic smooth muscle, 3.6.4.-, Alpha-actin-2, Cell growth-inhibiting gene 46 protein, Actin, aortic smooth muscle, intermediate form, ACTA2, ACTSA, ACTVS
<b>Dilution</b>	WB=1:1000-5000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,Flow-Cyt=1 µg/Test
<b>Storage</b>	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

## Protein Information

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<b>Name</b>	ACTA2
<b>Synonyms</b>	ACTSA, ACTVS
<b>Function</b>	Actins are highly conserved proteins that are involved in various types of cell motility and are ubiquitously expressed in all eukaryotic cells.
<b>Cellular Location</b>	Cytoplasm, cytoskeleton.

## Background

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All eukaryotic cells express Actin, which often constitutes as much as 50% of total cellular protein. Actin filaments can form both stable and labile structures and are crucial components of microvilli and the contractile apparatus of muscle cells. While lower eukaryotes, such as yeast, have only one Actin gene, higher eukaryotes have several isoforms encoded by a family of genes. At least six types of Actin are present in mammalian tissues and fall into three classes. alpha-Actin expression is limited to various types of muscle, whereas beta- and gamma-Actin are the principle constituents of filaments in other tissues. Members of the small GTPase family regulate the organization of the Actin cytoskeleton. Rho controls the assembly of Actin stress fibers and focal adhesion. Rac regulates Actin filament accumulation at the plasma membrane. Cdc42 stimulates formation of filopodia.

## References

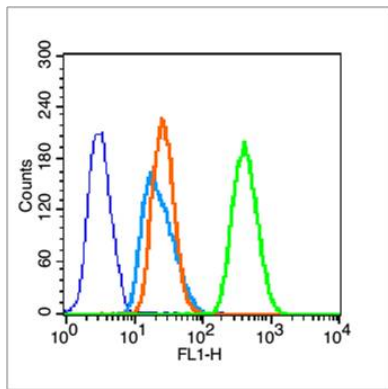
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Kamada S.,et al.Nucleic Acids Res. 17:1767-1767(1989).  
Reddy S.,et al.J. Biol. Chem. 265:1683-1687(1990).  
Kim J.W.,et al.Submitted (JUL-2004) to the EMBL/GenBank/DDBJ databases.  
Halleck A.,et al.Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.  
Ota T.,et al.Nat. Genet. 36:40-45(2004).

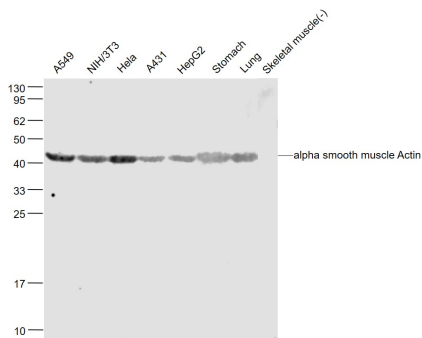
## Images

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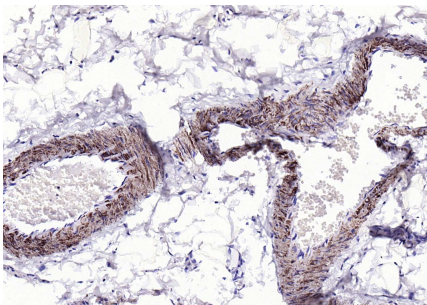
Blank control (blue line): Hela (fixed with 70% ethanol (Overnight at 4°C) and then permeabilized with 90% ice-cold methanol for 30 min on ice).



Primary Antibody (green line): Rabbit Anti-alpha smooth muscle Actin antibody (AP50857), Dilution: 1  $\mu$ g /10<sup>6</sup> cells;  
 Isotype Control Antibody (orange line): Rabbit IgG .  
 Secondary Antibody (white blue line): Goat anti-rabbit IgG-FITC, Dilution: 1  $\mu$ g /test.



Sample:  
 A549(Human) Cell Lysate at 30  $\mu$ g  
 NIH/3T3(Mouse) Cell Lysate at 30  $\mu$ g  
 Hela(Human) Cell Lysate at 30  $\mu$ g  
 A431(Human) Cell Lysate at 30  $\mu$ g  
 HepG2(Human) Cell Lysate at 30  $\mu$ g  
 Stomach (Mouse) Lysate at 40  $\mu$ g  
 Lung (Mouse) Lysate at 40  $\mu$ g  
 Skeletal muscle(-) (Mouse) Lysate at 40  $\mu$ g  
 Primary: Anti-alpha smooth muscle Actin (AP50857) at 1/1000 dilution  
 Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution  
 Predicted band size: 42 kD  
 Observed band size: 42 kD



Paraformaldehyde-fixed, paraffin embedded Human Duodenum; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; Antibody incubation with alpha smooth muscle Actin Polyclonal Antibody, Unconjugated (AP50857) at 1:200 overnight at 4°C, followed by conjugation to the SP Kit (Rabbit, SP-0023) and DAB (C-0010) staining.

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