10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

alpha smooth muscle Actin Rabbit pAb

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Catalog # AP50856

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	P62736
Reactivity	Human, Mouse, Rat
Predicted	Rabbit, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	42009
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Actin alpha
Epitope Specificity	165-260/377
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Cytoplasm, cytoskeleton.
SIMILARITY	Belongs to the actin family.
SUBUNIT	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.
Post-translational modifications	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).
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.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	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

Gene ID	59
Other Names	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
Dilution	WB=1:2000-10000,IHC-P=1:200-800,IHC-F=1:200-800,IF=1:200-800,Flow-Cyt=1 g/Test
Storage	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

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

Background

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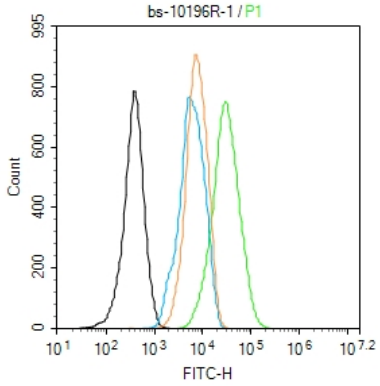
References

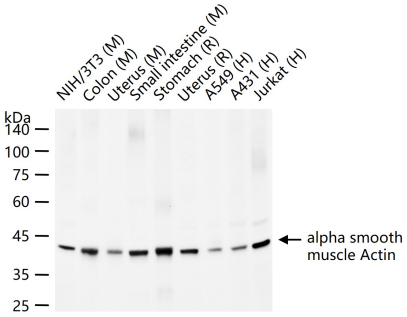
Kamada S.,et al.Nucleic Acids Res. 17:1767-1767(1989).
Reddy S.,et al.J. Biol. Chem. 265:1683-1687(1990).
Kim J.W.,et al.Submitted (JUL-2004) to the EMBL/GenBank/DDBJ databases.
Halleck A.,et al.Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.
Ota T.,et al.Nat. Genet. 36:40-45(2004).

Images

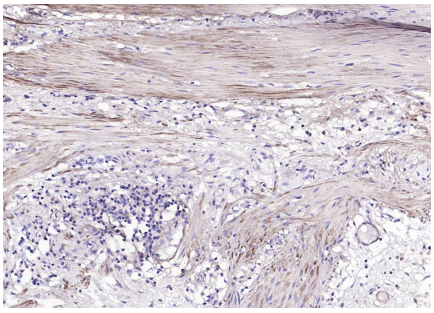
Blank control: NIH/3T3.
Primary Antibody (green line): Rabbit Anti-alpha smooth muscle Actin antibody (AP50856)



Dilution: 1 μg /10^6 cells;
Isotype Control Antibody (orange line): Rabbit IgG .
Secondary Antibody : Goat anti-rabbit IgG-AF488
Dilution: 1 μg /test.
Protocol
The cells were fixed with 4% PFA (10min at room temperature)and then permeabilized with 90% ice-cold methanol for 20 min at -20℃. The cells were then incubated in 5%BSA to block non-specific protein-protein interactions for 30 min at room temperature .Cells stained with Primary Antibody for 30 min at room temperature. The secondary antibody used for 40 min at room temperature. Acquisition of 20,000 events was performed.



25 ug total protein per lane of various lysates (see on figure) probed with alpha smooth muscle Actin polyclonal antibody, unconjugated (AP50856) at 1:2000 dilution and 4°C overnight incubation. Followed by conjugated secondary antibody incubation at r.t. for 60 min.



Paraformaldehyde-fixed, paraffin embedded (human colon carcinoma); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (alpha smooth muscle Actin) Polyclonal Antibody, Unconjugated (AP50856) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand