SunLong Biotech Co.,LTD
Tel: 0086-571-56623320 Fax:0086-571-56623318
E-mail:sales@sunlongbiotech.com
www.sunlongbiotech.com

Rabbit Anti-alpha smooth muscle Actin antibody

SL0189R

Product Name	alpha smooth muscle Actin
Chinese Name	肌动蛋白 α/α-SMA/α Actin 抗体
Alias	alpha sarcomeric Actin; alpha smooth muscle Actin; Actin alpha; ASMA; ASM-A; alpha-SMA; alpha SMA; AAT6; ACTA2; Actin alpha 2 smooth muscle aorta; Actin aortic smooth muscle; ACTSA; ACTVS; Alpha 2 actin; Alpha-actin 2; Cell growth inhibiting gene 46 protein; Growth inhibiting gene 46; ACTA_HUMAN; Actin alpha 2 smooth muscle aorta; Actin aortic smooth muscle; Actin, aortic smooth muscle; Alpha 2 actin; Alpha actin 2; Alpha cardiac actin; Alpha-actin 2; Alpha-actin-2; Cell growth inhibiting gene 46 protein; Cell growth-inhibiting gene 46 protein; Growth inhibiting gene 46; MYMY5 α-Smooth Muscle Actin; α Smooth Muscle Actin;
Research Area	Tumour Cell biology immunology Cytoskeleton
Immunogen Species	Rabbit
Clonality	Polyclonal
React Species	Human,Mouse,Rat(predicted:Rabbit)
Applications	WB=1:1000-5000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,Flow-Cyt=1μg/Test not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Theoretical molecular weight	42kDa
Cellular localization	cytoplasmic
Form	Liquid
Concentration	1mg/ml
immunogen	KLH conjugated synthetic peptide derived from human Actin alpha: 301-375/375
Lsotype	IgG
Purification	affinity purified by Protein A
Buffer	Human,Mouse,Rat(predicted:Rabbit)1M TBS(pH7.4) with 1% BSA,

Solution	Human,Mouse,Rat(predicted:Rabbit)3% Proclin300 and 50% Glycerol.
Storage	Shipped at 4℃. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
Attention	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
PubMed	PubMed

Product Detail

The product encoded by this gene belongs to the actin family of proteins, which are highly conserved proteins that play a role in cell motility, structure and integrity. Alpha, beta and gamma actin isoforms have been identified, with alpha actins being a major constituent of the contractile apparatus, while beta and gamma actins are involved in the regulation of cell motility. This actin is an alpha actin that is found in skeletal muscle. Mutations in this gene cause nemaline myopathy type 3, congenital myopathy with excess of thin myofilaments, congenital myopathy with cores, and congenital myopathy with fiber-type disproportion, diseases that lead to muscle fiber defects. [provided by RefSeq, Jul 2008]

Function:
Actins are highly conserved proteins that are involved in various types of cell motility and are ubiquitously expressed in all eukaryotic cells.

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.

Subcellular Location:
Cytoplasm, cytoskeleton.

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:
Note=ACTA2 mutations predispose patients to a variety of diffuse and diverse vascular diseases, premature onset coronary artery disease (CAD), premature ischemic strokes and Moyamoya disease.
Defects in ACTA2 are the cause of familial aortic aneurysm 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.
Defects in ACTA2 are the cause of Moyamoya disease type 5 (MYMY5) [MIM:614042]. Moyamoya disease is a progressive cerebral angiopathy characterized by bilateral

intracranial carotid artery stenosis and telangiectatic vessels in the region of the basal ganglia. The abnormal vessels resemble a 'puff of smoke' (moyamoya) on cerebral angiogram. Affected individuals can develop transient ischemic attacks and/or cerebral infarction, and rupture of the collateral vessels can cause intracranial hemorrhage. Hemiplegia of sudden onset and epileptic seizures constitute the prevailing presentation in childhood, while subarachnoid bleeding occurs more frequently in adults.
Defects in ACTA2 are the cause of multisystemic smooth muscle dysfunction syndrome (MSMDYS) [MIM:613834]. MSMDYS is a syndrome characterized by dysfunction of smooth muscle cells throughout the body, leading to aortic and cerebrovascular disease, fixed dilated pupils, hypotonic bladder, malrotation, and hypoperistalsis of the gut and pulmonary hypertension.

Similarity:
Belongs to the actin family.

SWISS:
P62736

Gene ID:
59

Database links:
Entrez Gene: 101021287 Baboon

Entrez Gene: 515610 Cow

Entrez Gene: 59 Human

Entrez Gene: 11475 Mouse

Entrez Gene: 733615 Pig

Entrez Gene: 100009271 Rabbit

Entrez Gene: 81633 Rat

Omim: 102620 Human

SwissProt: P62739 Cow

SwissProt: P62736 Human

SwissProt: P62737 Mouse

SwissProt: P62740 Rabbit

SwissProt: P62738 Rat

Unigene: 500483 Human

Unigene: 213025 Mouse

Unigene: 195319 Rat

Unigene: 3114 Rat

结构蛋白（Structural Proteins）
Actin α/α-Actin 是一种具有收缩能力的微丝蛋白，a-SMA 广泛分布于几乎所有的肌型细胞中。Actin-α 蛋白主要用于检测骨骼肌、平滑肌、血管平滑肌、心肌和肌原性 Tumour 包括：平滑肌瘤、平滑肌肉瘤、横纹肌肉瘤以及肌上细胞和肌上皮瘤。Actin（肌动蛋白）是在所有真核细胞中都表达的高度保守的蛋白质。它们沿微管组成了 Cytoskeleton 的主要成分。肌动蛋白至少表达为 6 种异构形式。它在心脏、骨骼横纹肌组织和某些平滑肌组织中表达，调节其收缩功能。有报导说肌动蛋白在乳房瘤中是高度磷酸化的。肌动蛋白的功能失调也会导致某种类型的心脏病。平滑肌 α 肌动蛋白使人更感兴趣，因为编码它的基因是相对局限于在血管平滑肌细胞中表达的少数几个基因之一。肌动蛋白是标记平滑肌和肌 epithelial cellsTumour 的有效工具。

Product Picture

Sample:Kidney (Mouse) Lysate at 40 ug

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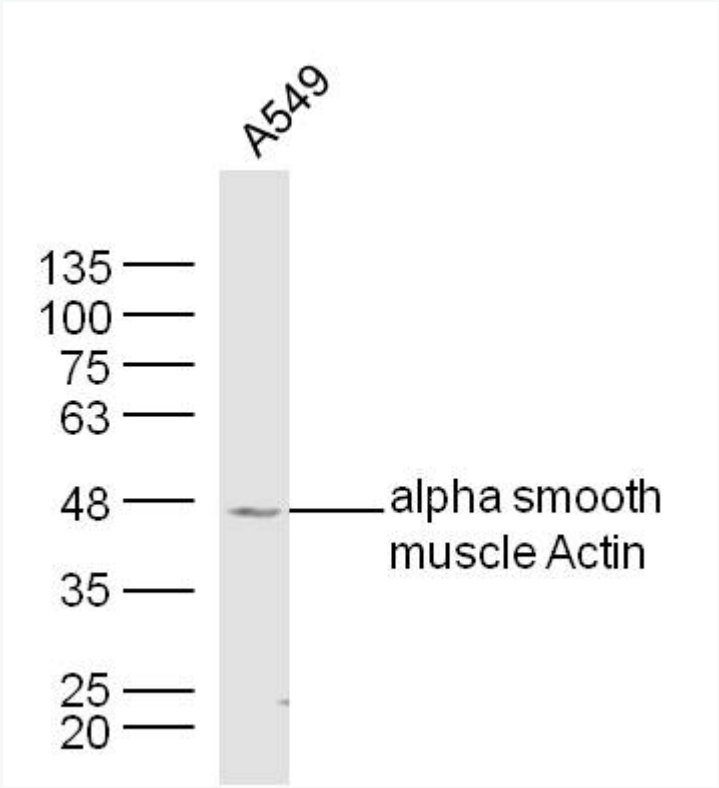
Primary: Anti- alpha-SMA (SL0189R) at 1/300 dilution

Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 42 kD

Observed band size: 42 kD



Sample: A549(Human) Lysate at 40 ug

Primary: Anti- alpha-SMA (SL0189R) at 1/300 dilution

Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 42 kD

Observed band size: 42 kD

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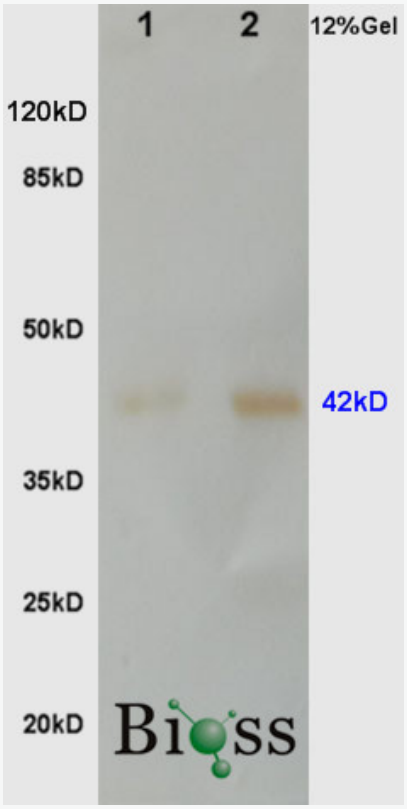

Sample:

Brain (Rat) Lysate at 40 ug

Kidney (Rat) Lysate at 40 ug

Primary: Anti-alpha-SMA(SL0189R) at 1/300 dilution

Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 42 kD

Observed band size: 42 kD

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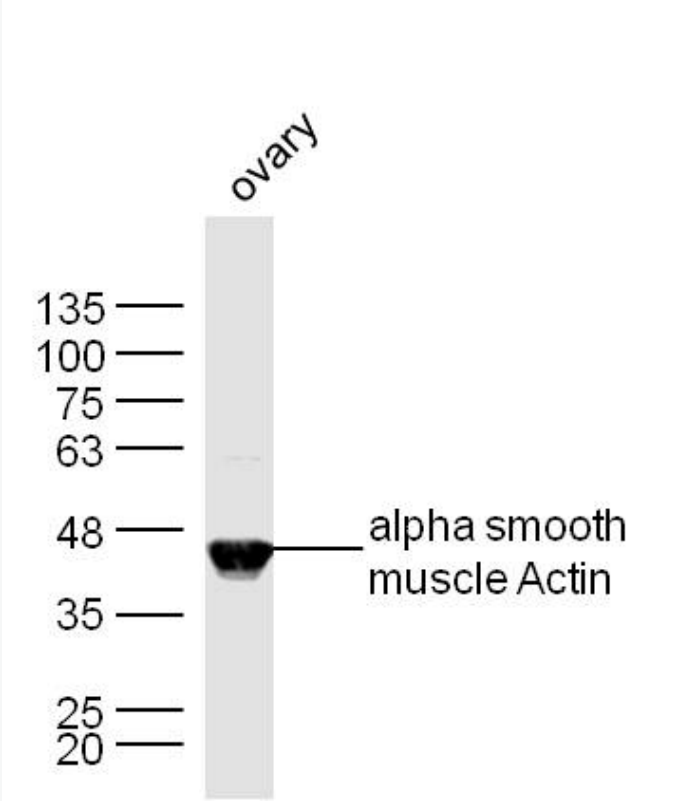


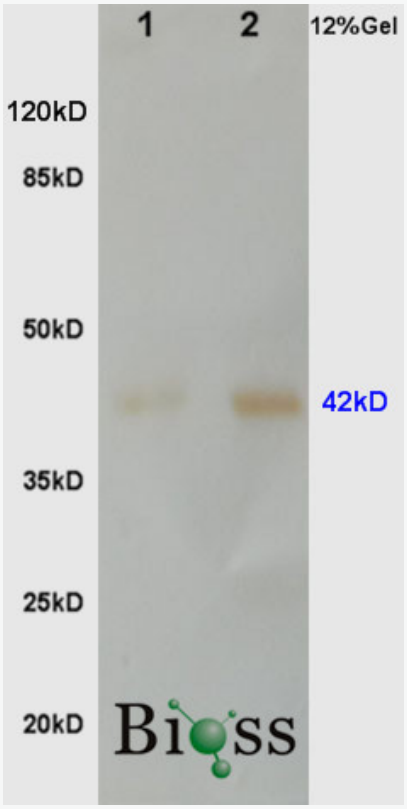
Sample:Ovary (Mouse) Lysate at 40 ug

Primary: Anti-alpha-SMA (SL0189R) at 1/300 dilution

Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 42 kD

Observed band size: 42 kD



Sample:

Brain (Rat) Lysate at 40 ug

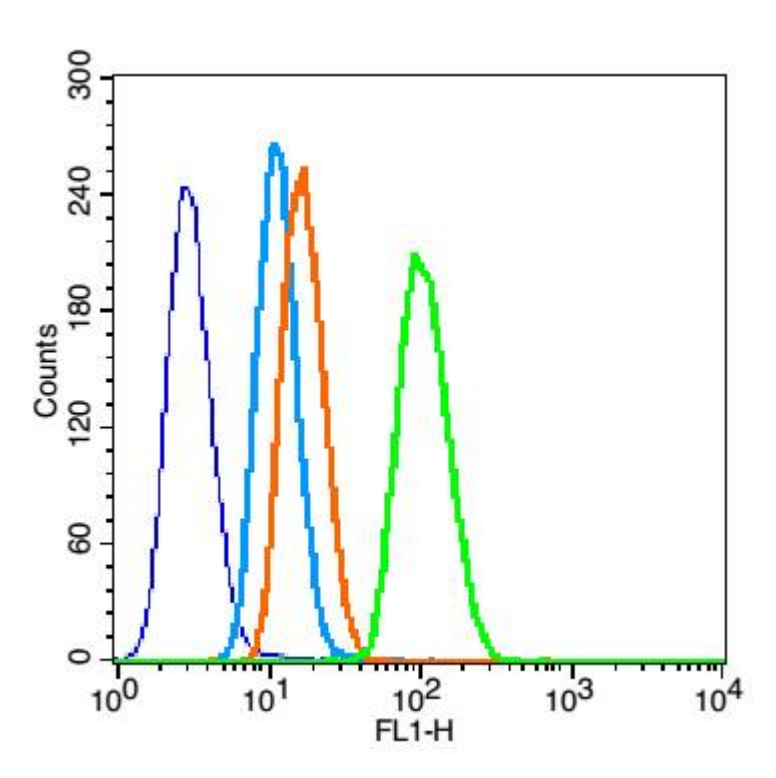
Kidney (Rat) Lysate at 40 ug

Primary: Anti- alpha-SMA (SL0189R) at 1/300 dilution

Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 42 kD

Observed band size: 42 kD



Blank control (blue line): Hela (blue).

Primary Antibody (green line): Rabbit Anti-alpha smooth muscle Actin antibody (SL0189R)

Dilution: 1µg /10^6 cells;

Isotype Control Antibody (orange line): Rabbit IgG .

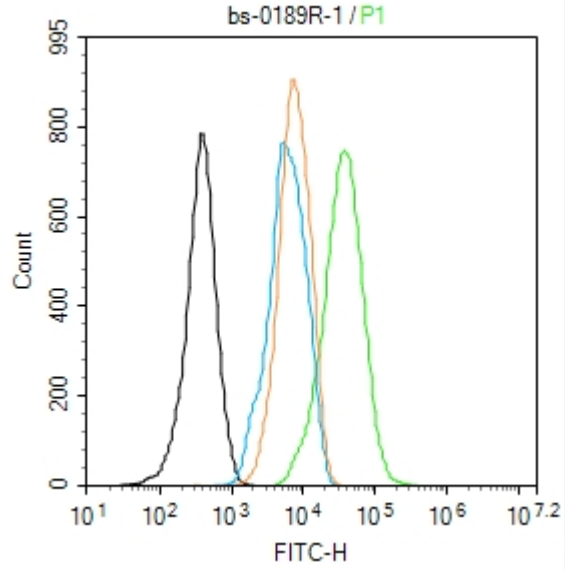
Secondary Antibody (white blue line): Goat anti-rabbit IgG-FITC

Dilution: 1µg /test.

Protocol

The cells were fixed with 80% methanol (5 min at -20°C) and then permeabilized with 0.1% PBS-Tween for 20 min at room temperature. Cells stained with Primary Antibody for 30 min at room temperature. The cells were then incubated in 1 X PBS/2%BSA/10%

goat serum to block non-specific protein-protein interactions followed by the antibody for 15 min at room temperature. The secondary antibody used for 40 min at room temperature. Acquisition of 20,000 events was performed.



Blank control: NIH/3T3.

Primary Antibody (green line): Rabbit Anti-alpha smooth muscle Actin antibody (SL0189R)

Dilution: 1µg /10^6 cells;

Isotype Control Antibody (orange line): Rabbit IgG .

Secondary Antibody : Goat anti-rabbit IgG-AF488

Dilution: 1µg /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.