abcam

ab119952

Anti-pan Actin antibody [4A4]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.05% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human ACTA2 aa 350 to C-terminus conjugated to Keyhole Limpet Haemocyanin. The exact immunogen used to generate this antibody is proprietary information. Database link P62736
Clone number	4A4
Purification technique	Affinity purification Protein G
Specificity	Actin proteins have very high homology. The immunogen for this product is based on the ACTA2 protein but this product will also detect Gamma actin, and likely other actin family members too.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from tissue culture supernatant.

Reactivity data

Flow Cyt

Tested

Species	Human

Dilution info	1/200 - 1/400
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	Rat, Mouse, African green monkey
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

ELISA

Tested

Species	Recombinant fragment - Human
Dilution info	1/10000
Notes	-

Expected

Species	Human, Rat, Mouse, African green monkey
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Rat
Dilution info	1/500 - 1/2000

Notes	-

Species	Mouse
Dilution info	1/500 - 1/2000
Notes	-

Species	African green monkey
Dilution info	1/500 - 1/2000
Notes	-

Species	Human
Dilution info	1/500 - 1/2000
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/200 - 1/1000
Notes	-

Expected

Species	Rat, Mouse, African green monkey
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Rat, African green monkey, Human, Recombinant fragment - Human
Dilution info	-
Notes	-

Target data

See full target information ACTA2

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

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The actin protein sometimes referred to as "pan actin" is an important component of the cytoskeleton and is fundamental in maintaining cell structure and integrity. Alternately called beta-actin or gamma-actin depending which variant is expressed this protein has a molecular weight of approximately 42 kDa. Actin is ubiquitously expressed in almost all eukaryotic cells where it forms dynamic networks that

	support the plasma membrane assist in cell movement and mediate intracellular transport.
Biological function summary	Actin polymerizes to form filaments (F-actin) from its monomeric forms (G-actin) within the cell. These filaments are critical for constructing the cytoskeleton and anchor cellular structures in place. Actin functions within the actin-myosin complex which facilitates muscle contraction and movement in non-muscle cells. Through this complex actin provides essential support in cellular processes such as cytokinesis and vesicle movement.
Pathways	Actin is important for pathways that control cell motility and structural rearrangements. It plays a significant role in the Rho-GTPase signaling pathway which regulates actin cytoskeleton dynamics. Actin interacts with other important proteins such as myosin and tropomyosin to facilitate these activities. Another important pathway involving actin is the Wnt signaling pathway where it aids in the regulation of cell proliferation and differentiation.
Associated diseases and disorders	Actin is linked to conditions such as cancer metastasis and muscular dystrophies. In cancer actin's role in cell motility and invasion contributes to the metastatic spread of tumors. Actin dysregulation is also implicated in certain muscle disorders where mutations affect the formation and function of muscle fibers. In these contexts actin closely connects with dystrophin an important protein in muscle tissue integrity and any disruption can lead to disease manifestation.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

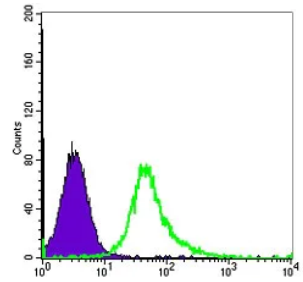
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

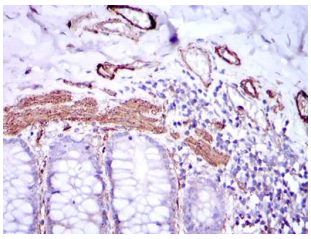
6 product images



Flow Cytometry - Anti-pan Actin Antibody [4A4] (ab119952)

Pan Actin Flow Cytometry staining using mouse Anti-pan Actin antibody

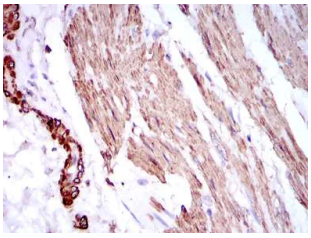
Flow cytometric analysis of Hela cells using ab119952 at a dilution of 1/200 (green) and negative control (purple).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-pan Actin Antibody [4A4] (ab119952)

Pan Actin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-pan Actin antibody

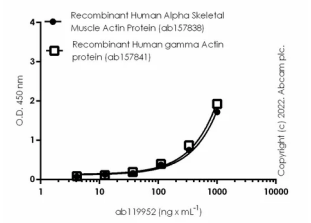
Immunohistochemical analysis of paraffin-embedded Human duodenum tissue using ab119952 at a dilution of 1/200 with DAB staining.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-pan Actin Antibody [4A4] (ab119952)

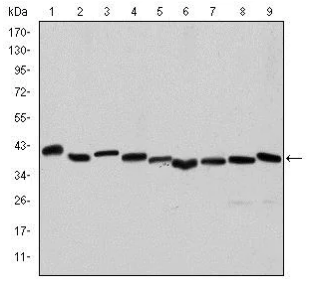
Pan Actin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-pan Actin antibody

Immunohistochemical analysis of paraffin-embedded Human esophagus tissue using ab119952 at a dilution of 1/200 with DAB staining.



ELISA - Anti-pan Actin antibody [4A4] (ab119952)

1 ug per mL of recombinant protein ab157838 and ab157841 were immobilised in PBS on an ELISA plate overnight. After blocking in 5% BSA, primary antibody ab119952 was added in a concentration range of 0.017-1000 ng per mL.
Pre-absorbed secondary antibody goat anti-rabbit IgG H&L (ab97080) was used at 1/20000 dilution.



Western blot - Anti-pan Actin Antibody [4A4] (ab119952)

All lanes:
Western blot - Anti-pan Actin Antibody [4A4] (ab119952) at 1/500 dilution

Lane 1:
HeLa cell lysate

Lane 2:
A431 cell lysate

Lane 3:
Jurkat cell lysate

Lane 4:
K562 cell lysate

Lane 5:
HEK293 cell lysate

Lane 6:
HepG2 cell lysate

Lane 7:
NIH3T3 cell lysate

Lane 8:
PC12 cell lysate

Lane 9:
COS-7 (African green monkey kidney fibroblast-like cell line) cell lysate

Predicted band size: 42 kDa

Observed band size: 42 kDa

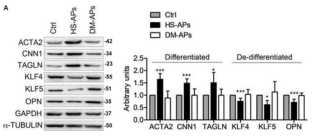


Image collected and cropped by CiteAb under a CC-BY license from the publication

Western blot - Anti-pan Actin Antibody [4A4] (ab119952)

Pan Actin Western blot staining using mouse Anti-pan Actin antibody

pan Actin western blot using anti-pan Actin Antibody [4A4] ab119952. Publication image and figure legend from Su, M., Fan, S., et al., 2020, Front Physiol, PubMed 32733269.

ab119952 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab119952 please see the product overview.

MiR-223 deficiency in diabetic platelet fails to suppress VSMC proliferation. Activated platelets (APs) from healthy subject (HS) and DM patients were cocultured with human VSMCs for 48 h. (A) Expression of differentiation markers ACTA2, CNN1, and TAGLN and dedifferentiation markers OPN, MYH10, KLF4, and KLF5 in control (Ctrl) VSMCs and APs cocultured with VSMCs (HS-APs, DM-APs) was detected with western blot analysis. (B,C) The rate of proliferation was determined by CCK8 assay and Brdu assay in VSMCs treated with APs pretreated by RNase A (degrades the RNA). Data are presented as mean ± SD (n = 6). Comparisons between more than two groups were analyzed using one-way ANOVA analysis with the Dunnett's multiple correction. *P < 0.05, **P < 0.01, ***P < 0.001 vs Ctrl (VSMCs without platelets); #P < 0.05, ##P < 0.01, ###P < 0.001 vs HS-APs. (D) The rate of proliferation was determined by EdU incorporation assay in VSMCs transfected with miR-223 mimic. Data are presented as mean ± SD (n = 6). Comparisons between two groups were analyzed using unpaired nonparametric Student's t-test.*P < 0.05 vs Ctrl (miR-NC).

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