abcam

ab223458

Alexa Fluor® 647 Anti-Actin antibody [EPR16875] - Cytoskeleton Marker

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 647
Excitation/Emission	Ex: 650nm, Em: 665nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR16875
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	This product gave a positive signal in HeLa cells fixed with 100% methanol (5 min)

Expected

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

Predicted

Species	Chicken
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50000
Notes	-

Expected

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

Predicted

Species	Chicken
Dilution info	-
Notes	-

Target data

See full target information ACTA1

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
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle, Store in the dark

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

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Supplementary info

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

Activity summary	Actin also known as globular (G-actin) or filamentous (F-actin) actin plays a central role in cell structure and movement. This protein has a molecular weight of approximately 42 kDa and resides abundantly in eukaryotic cells especially in muscle and cytoskeletal structures. It comes in several isoforms with varying expression profiles across tissues. Actin can undergo polymerization from its G-actin monomers into F-actin filaments a process that is reversible through depolymerization allowing for dynamic cellular functions.
Biological function summary	Actin contributes to various cellular processes by forming the cytoskeleton which provides mechanical support and determines cell shape. Actin also facilitates cell motility division and intracellular transport through rapid polymerization and depolymerization cycles. Within cells actin associates with other proteins to form complexes such as the Arp2/3 complex which assists actin in the branching of filaments critical for pushing forward the cell's leading edge during movement. Techniques like actin immunofluorescence help visualize actin filaments within cells revealing its extensive network.
Pathways	Actin plays an integral role in pathways like cell movement and signal transduction. The Rho family of GTPases regulates actin cytoskeleton rearrangements influencing cell shape and migration. Actin function interactions involve proteins like myosin forming actomyosin complexes essential for muscle contraction and other cell motility activities. Actin polymerization and depolymerization cycles are key to the dynamic regulation within these pathways ensuring adequate cellular responses to environmental signals.
Associated diseases and disorders	Mutations or misregulation of actin and its associated pathways link to conditions such as cardiomyopathies and cancer metastasis. In familial cardiomyopathy actin mutations disrupt normal cardiac muscle contraction. In cancer altered actin polymerization and depolymerization enable invasive cell migration facilitating metastasis. Proteins like myosin and tropomyosin associate with actin in these pathologies illustrating the impact of actin dynamics on disease progression and highlighting actin as a therapeutic target. Anti-actin antibodies can be used in research and diagnostics to better understand these disorders.

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.

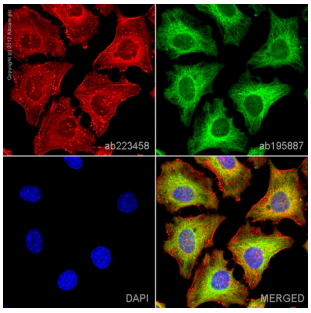
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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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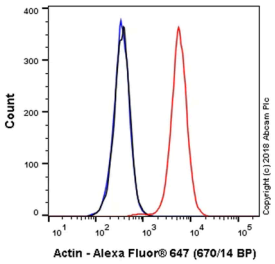
2 product images



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 647 Anti-Actin antibody [EPR16875] - Cytoskeleton Marker (ab223458)

Actin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Actin antibody

ab223458 staining Actin in HeLa cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab223458 at 1/100 dilution (shown in red) and ab195887, Mouse monoclonal to alpha Tubulin (Alexa Fluor® 488), at 1/250 dilution (shown in green). Nuclear DNA was labelled with DAPI (shown in blue).
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Flow Cytometry (Intracellular) - Alexa Fluor® 647 Anti-Actin antibody [EPR16875] - Cytoskeleton Marker (ab223458)

Actin Flow Cytometry (Intracellular) staining using rabbit Anti-Actin antibody

Overlay histogram showing HeLa cells stained with ab223458 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS / 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (ab223458, 1/50000 dilution) for 30 min at 22°C.
Isotype control antibody (black line) was Rabbit IgG (monoclonal) Alexa Fluor® 647 (ab199093) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5,000 events were collected using a 40 mW Red laser (640nm) and 670/14 bandpass filter.

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