abcam

ab242387

Anti-beta Actin antibody [SP124] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	SP124
Purification technique	Affinity purification Protein A/G
Specificity	The immunogen used for this product shares 71% homology with Gamma actin/actin cytoplasmic 2 and 64% homology with cardiac, smooth, and skeletal muscle actin. Cross-reactivity with these proteins has not been confirmed experimentally.
Concentration	1.038 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from TCS by protein A/G.

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	-
Notes	Boil tissue section in 10mM citrate buffer, pH 6.0 for 10 min followed by cooling at room temperature for 20 min.

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Rat, Rabbit, Chicken, Cow, Dog, Pig
Dilution info	-
Notes	-

WB

Expected

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

Predicted

Species	Rabbit, Chicken, Cow, Dog, Pig
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Rat, Rabbit, Chicken, Cow, Dog, Pig
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Predicted

Species	Rat, Rabbit, Chicken, Cow, Dog, Pig
Dilution info	-

Notes	-

Target data

See full target information ACTB

Function	Actin is a highly conserved protein that polymerizes to produce filaments that form cross-linked networks in the cytoplasm of cells (PubMed:25255767, PubMed:29581253). Actin exists in both monomeric (G-actin) and polymeric (F-actin) forms, both forms playing key functions, such as cell motility and contraction (PubMed:29581253). In addition to their role in the cytoplasmic cytoskeleton, G- and F-actin also localize in the nucleus, and regulate gene transcription and motility and repair of damaged DNA (PubMed:29925947). Plays a role in the assembly of the gamma-tubulin ring complex (gTuRC), which regulates the minus-end nucleation of alpha-beta tubulin heterodimers that grow into microtubule protafilaments (PubMed:39321809, PubMed:38609661). Part of the ACTR1A/ACTB filament around which the dynactin complex is built (By similarity). The dynactin multiprotein complex activates the molecular motor dynein for ultra-processive transport along microtubules (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab242387 is the carrier-free version of ab115777.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes,

oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	Beta actin also known as beta cytoplasmic actin plays a central role in cell structure and motility. It is part of the actin protein family and is widely expressed in eukaryotic cells. The molecular weight of beta actin is approximately 42 kDa. It contributes to the formation of the cytoskeleton and participates in various cellular processes including movement and stability. Actin is abundant in all cell types providing structural integrity and flexibility.
Biological function summary	Beta actin contributes to the maintenance of cell shape and is an important player in cell division and muscle contraction. It forms part of a larger actin filaments network often associating with other proteins to form the actin cytoskeleton complex. This complex supports cellular processes such as signaling intracellular trafficking and positioning of organelles. The dynamic polymerization and depolymerization of actin filaments are critical for cellular functions.
Pathways	Beta actin functions in the regulation of important biological pathways such as the Rho/Rac/Cdc42 signaling pathway and the Wnt signaling pathway. These pathways are essential in numerous cellular activities including cell morphology and gene transcription. Beta actin closely interacts with proteins like myosin and tropomyosin which facilitate its role in muscle contraction and cell division and proteins such as Rac and Cdc42 which help govern cytoskeletal dynamics and cellular responses to extracellular stimuli.
Associated diseases and disorders	Beta actin has links to cancers and muscular dystrophies. Aberrations in actin dynamics can result in tumor cell migration and metastasis making it a component of interest in cancer research. Additionally mutations or dysregulation in actin-associated proteins may contribute to muscular dystrophies affecting muscle function and strength. Beta actin's interactions with proteins like dystrophin involved in maintaining muscle integrity further highlight its relevance in both biological functions and disease contexts.

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.

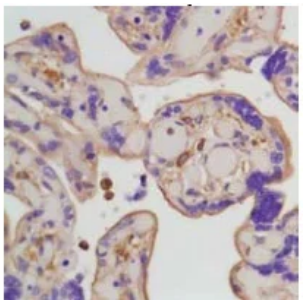
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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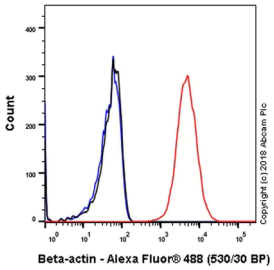
10 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Actin antibody [SP124] - BSA and Azide free (ab242387)

Beta Actin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-beta Actin antibody

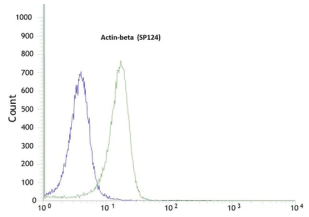
Staining of Human beta Actin in a Formalin/PFA-fixed paraffin-embedded section of Human Placenta using ab115777 at a dilution of 1/200.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, and sodium azide (ab115777).



Flow Cytometry (Intracellular) - Anti-beta Actin antibody [SP124] - BSA and Azide free (ab242387)

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

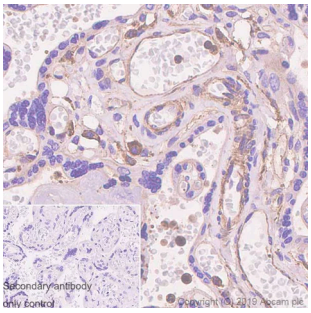
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma epithelial cell) cells labeling beta Actin with purified ab115777 at 1/200 dilution (0.57 µg/ml) - Red. Cells were fixed with 4% paraformaldehyde . A Goat anti rabbit IgG (Alexa Fluor® 488, ab150081) secondary antibody was used at 1/2000 dilution. Isotype control - Rabbit monoclonal IgG (ab172730) - Black. Unlabeled control - Blue. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab242387)



Flow Cytometry (Intracellular) - Anti-beta Actin antibody [SP124] - BSA and Azide free (ab242387)

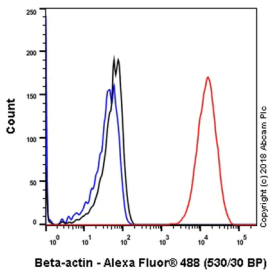
Beta Actin Flow Cytometry (Intracellular) staining using rabbit Anti-beta Actin antibody

Intracellular flow cytometric analysis of rabbit anti-beta Actin (SP124) antibody ab115777 (1/100) in HeLa cells (green) compared to negative control of rabbit IgG (blue)
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, and sodium azide (ab115777).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Actin antibody [SP124] - BSA and Azide free (ab242387)

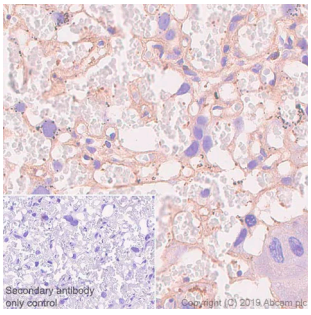
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human placenta tissue sections labeling beta Actin with ab115777 at 1/200 dilution (0.34 µg/ml). Heat mediated antigen retrieval was performed Heat mediated antigen retrieval with citrate sodium buffer (pH 6.0, epitope retrieval solution 1) for 10mins. Goat Anti-Rabbit & Mouse IgG (HRP) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab115777)



Flow Cytometry (Intracellular) - Anti-beta Actin antibody [SP124] - BSA and Azide free (ab242387)

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

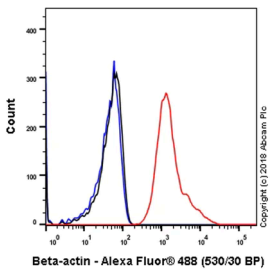
Intracellular Flow Cytometry analysis of C6 (rat glial tumor glial cell) cells labeling beta Actin with purified ab115777 at 1/200 dilution (0.57 µg/ml) - Red. Cells were fixed with 4% paraformaldehyde . A Goat anti rabbit IgG (Alexa Fluor® 488, ab150081) secondary antibody was used at 1/2000 dilution. Isotype control - Rabbit monoclonal IgG (ab172730) - Black. Unlabeled control - Blue.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab242387)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Actin antibody [SP124] - BSA and Azide free (ab242387)

Beta Actin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-beta Actin antibody

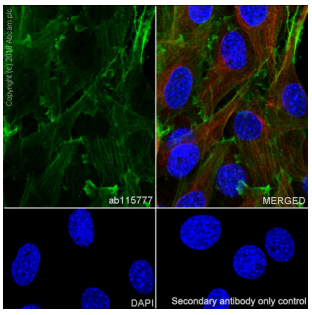
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Rat placenta tissue sections labeling beta Actin with ab115777 at 1/100 dilution (0.68 µg/ml). Heat mediated antigen retrieval was performed Heat mediated antigen retrieval with citrate sodium buffer (pH 6.0, epitope retrieval solution 1) for 10mins. Goat Anti-Rabbit & Mouse IgG (HRP) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab115777)



Flow Cytometry (Intracellular) - Anti-beta Actin antibody [SP124] - BSA and Azide free (ab242387)

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

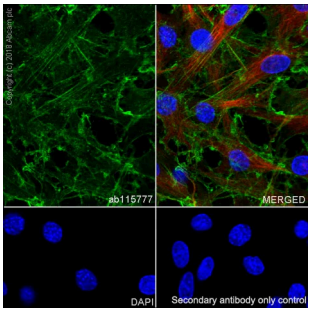
Intracellular Flow Cytometry analysis of NIH/3T3 (mouse embryonic fibroblast) cells labeling beta Actin with purified ab115777 at 1/200 dilution (0.57 µg/ml) - Red. Cells were fixed with 4% paraformaldehyde . A Goat anti rabbit IgG (Alexa Fluor® 488, ab150081) secondary antibody was used at 1/2000 dilution. Isotype control - Rabbit monoclonal IgG (ab172730) - Black. Unlabeled control - Blue. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab242387)



Immunocytochemistry/ Immunofluorescence - Anti-beta Actin antibody [SP124] - BSA and Azide free (ab242387)

Beta Actin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-beta Actin antibody

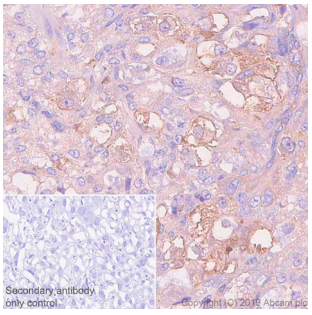
Immunocytochemistry/ Immunofluorescence analysis of NIH/3T3 (mouse embryonic fibroblast) cells labeling beta Actin with purified ab115777 at 1:50 (2.28 µg/ml). Cells were fixed in 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab242387)



Immunocytochemistry/ Immunofluorescence - Anti-beta Actin antibody [SP124] - BSA and Azide free (ab242387)

Beta Actin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-beta Actin antibody

Immunocytochemistry/ Immunofluorescence analysis of C6 (rat glial tumor glial cell) cells labeling beta Actin with purified ab115777 at 1:50 (2.28 µg/ml). Cells were fixed in 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab242387)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Actin antibody [SP124] - BSA and Azide free (ab242387)

Beta Actin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-beta Actin antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Mouse placenta tissue sections labeling beta Actin with ab115777 at 1/200 dilution (0.34 µg/ml). Heat mediated antigen retrieval was performed Heat mediated antigen retrieval with citrate sodium buffer (pH 6.0, epitope retrieval solution 1) for 10mins. Goat Anti-Rabbit & Mouse IgG (HRP) was

used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab115777)

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