abcam

ab115777

Anti-beta Actin antibody [SP124] - Cytoskeleton Marker

Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777) is a rabbit monoclonal antibody detecting beta Actin in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 140 publications

Lab Essentials | Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.6 Preservative: 0.1% Sodium azide Constituents: PBS, 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
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.
Purification notes	Purified from TCS by protein A/G.

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/200
Notes	Boil tissue section in 10mM citrate buffer, pH 6.0 for 10 min followed by cooling at room temperature for 20 min. Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/200
Notes	Boil tissue section in 10mM citrate buffer, pH 6.0 for 10 min followed by cooling at room temperature for 20 min. Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/200
Notes	Boil tissue section in 10mM citrate buffer, pH 6.0 for 10 min followed by cooling at room temperature for 20 min. Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Predicted

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

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/200
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Species	Rat

Dilution info	1/200
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Species	Human
Dilution info	1/200
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

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

WB

Tested

Species	Mouse
Dilution info	1/200
Notes	-

Species	Human
Dilution info	1/200
Notes	-

Expected

Species	Rat
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	1/50
Notes	-

Species	Rat
Dilution info	1/50
Notes	-

Expected

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

Predicted

Species	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	Conditional Ambient
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

Notes

What is this antibody validated in?
Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of beta Actin?
Anti-beta Actin [SP124] - Cytoskeleton Marker (ab115777) specifically detects a band for beta Actin (UniProt: P60709) at a molecular weight of 42kDa.

Collaboration
Anti-beta Actin [SP124] - Cytoskeleton Marker (ab115777) is a clone from the portfolio of Spring Bioscience (Roche) SP clones which have been optimised for immunohistochemistry (IHC).

Trusted by the scientific community
Anti-beta Actin [SP124] - Cytoskeleton Marker (ab115777) was first used in a scientific publication in 2011 and has been cited over 140 times in peer-reviewed journals.

Other related products
We have a range of other formats of antibody clone [SP124] also available for your convenience: ab115777, Carrier free - ab242387, Alexa Fluor® 488 - ab267526, ab279418, ab317794, Carrier free - ab317804

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.

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.

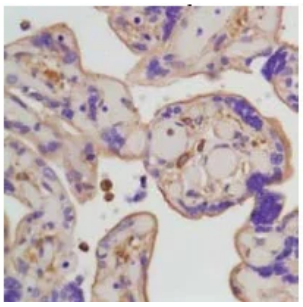
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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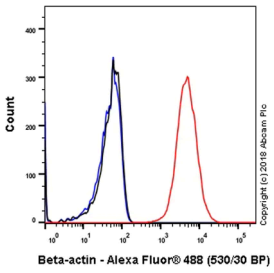
13 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777)

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

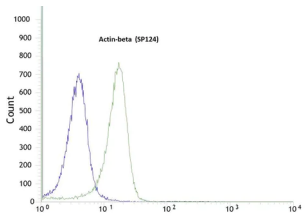
Staining of Human beta Actin in a Formalin/PFA-fixed paraffin-embedded section of Human Placenta using ab115777 at a dilution of 1/200.



Flow Cytometry (Intracellular) - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777)

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

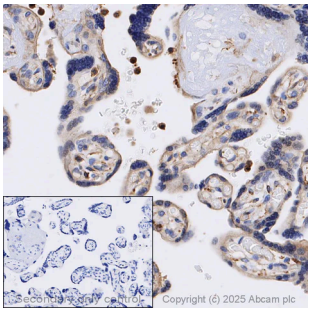
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma epithelial cell) cells labeling beta Actin with purified ab115777 at 1/200 - Red. Cells were fixed with 4% paraformaldehyde . A Goat anti rabbit IgG (Alexa Fluor® 488, ab150081) was used as the secondary antibody. Isotype control - Rabbit monoclonal IgG (ab172730) - Black. Unlabeled control - Blue.



Flow Cytometry (Intracellular) - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777)

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

Flow cytometric analysis of rabbit anti-beta Actin (SP124) antibody ab115777 (1/200) in HeLa cells (green) compared to negative control of rabbit IgG (blue)



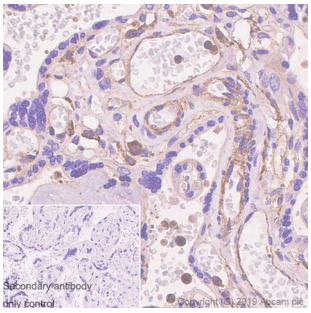
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777)

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

Immunohistochemical analysis of formalin fixed paraffin embedded human placenta labelling beta actin with ab115777 at a dilution of 1/1000. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was performed with DISCOVERY cell conditioning solution (CC1) 100°C, pH8.5 for 32mins.

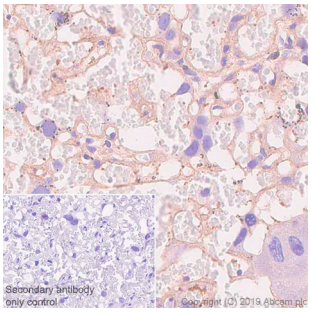
ab115777 anti-beta Actin antibody [SP124] antibody was incubated for 16mins at 37°C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.

Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777)

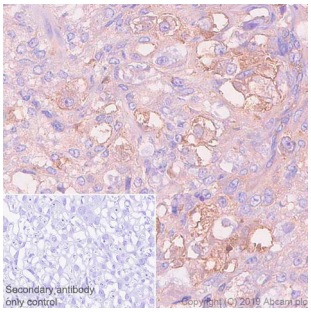
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human placenta tissue sections labeling beta Actin with ab115777 at 1/200 dilution. Heat mediated antigen retrieval was performed Heat mediated antigen retrieval with citrate sodium buffer (pH 6.0, epitope retrieval solution 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777)

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

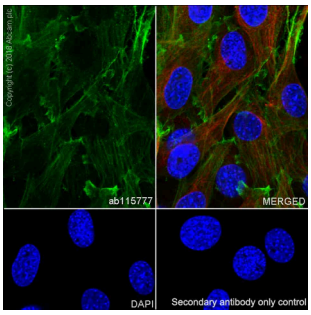
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Rat placenta tissue sections labeling beta Actin with ab115777 at 1/100 dilution. Heat mediated antigen retrieval was performed Heat mediated antigen retrieval with citrate sodium buffer (pH 6.0, epitope retrieval solution 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777)

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

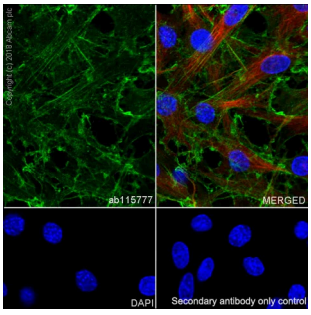
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Mouse placenta tissue sections labeling beta Actin with ab115777 at 1/200 dilution. Heat mediated antigen retrieval was performed Heat mediated antigen retrieval with citrate sodium buffer (pH 6.0, epitope retrieval solution 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.



Immunocytochemistry/ Immunofluorescence - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777)

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

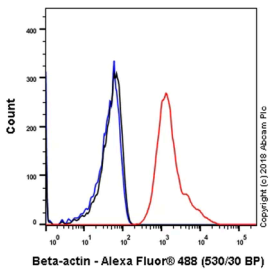
Immunocytochemistry/ Immunofluorescence analysis of NIH/3T3 (mouse embryonic fibroblast) cells labeling beta Actin with purified ab115777 at 1/50 dilution. Cells were fixed in 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Immunocytochemistry/ Immunofluorescence - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777)

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

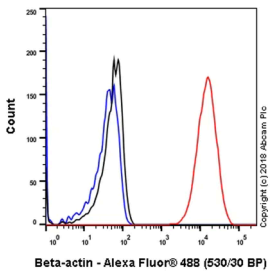
Immunocytochemistry/ Immunofluorescence analysis of C6 (rat glial tumor glial cell) cells labeling beta Actin with purified ab115777 at 1/50 dilutioin. Cells were fixed in 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Flow Cytometry (Intracellular) - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777)

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

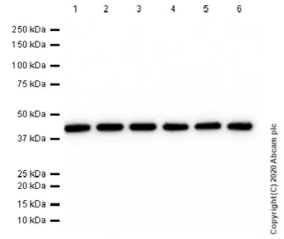
Flow Cytometry analysis of NIH/3T3 (mouse embryonic fibroblast) cells labeling beta Actin with purified ab115777 at 1/200 - Red. Cells were fixed with 4% paraformaldehyde . A Goat anti rabbit IgG (Alexa Fluor® 488, ab150081) was used secondary antibody. Isotype control - Rabbit monoclonal IgG (ab172730) - Black. Unlabeled control - Blue.



Flow Cytometry (Intracellular) - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777)

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

Flow Cytometry analysis of C6 (rat glial tumor glial cell) cells labeling beta Actin with purified ab115777 at 1/200 - Red. Cells were fixed with 4% paraformaldehyde . A Goat anti rabbit IgG (Alexa Fluor® 488, ab150081) was used as the secondary antibody. Isotype control - Rabbit monoclonal IgG (ab172730) - Black. Unlabeled control - Blue.



Western blot - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777)

Blocking/Diluting buffer and concentration 5% NFDM/TBST
All lanes:
Western blot - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777) at 1/200 dilution

Lane 1:
Raji (Human Burkitt's lymphoma B lymphocyte) whole cell lysate at 20 µg

Lane 2:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
NIH/3T3 (Mouse embryonic fibroblast) whole cell lysate at 20 µg

Lane 4:
A549 (Human lung carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 5:
HEK-293 (Human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 6:
RAW 264.7 (Mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

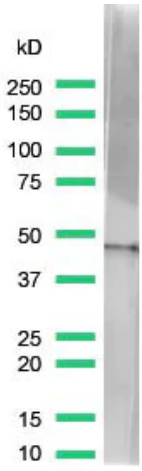
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 41 kDa

Observed band size: 42 kDa

Exposure time: 10s



Western blot - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777)

All lanes:
Western blot - Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab115777) at 1/200 dilution

All lanes:
Raji cell lystate

Predicted band size: 41 kDa

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