abcam

ab8226

Anti-beta Actin antibody [mAbcam 8226] - Loading Control

Mouse Monoclonal beta Actin antibody. Suitable for IHC-P, WB, ICC/IF and reacts with Rat, Human, Mouse samples. Cited in 3364 publications.

Alternative names

Beta-actin, ACTB

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 6.97% L-Arginine
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	mAbcam 8226
Purification technique	Affinity purification Protein G
Specificity	Does not cross-react with adult cardiac, smooth, or skeletal muscle actin. The immunogen used for this product shares 77% homology with Gamma actin/actin cytoplasmic 2. Cross-reactivity with this protein has not been confirmed experimentally.
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Rat
Dilution info	0.10000-0.50000 µg/mL
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Human
Dilution info	0.10000-0.50000 µg/mL
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Expected

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

Predicted

Species	Sheep, Rabbit, Horse, Chicken, Guinea pig, Cow, Dog, Pig, Monkey, Zebrafish, African green monkey, Chinese hamster, Armenian hamster
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1 µg/mL

Notes	**We recommend blocking using 2-5% BSA as we have found that use of 5% milk significantly reduces the band intensity for beta actin.** Please refer to the images section for the blocking comparison data.

Species	Rat
Dilution info	1 µg/mL
Notes	**We recommend blocking using 2-5% BSA as we have found that use of 5% milk significantly reduces the band intensity for beta actin.** Please refer to the images section for the blocking comparison data.

Species	Human
Dilution info	1 µg/mL
Notes	**We recommend blocking using 2-5% BSA as we have found that use of 5% milk significantly reduces the band intensity for beta actin.** Please refer to the images section for the blocking comparison data.

Predicted

Species	Sheep, Rabbit, Horse, Chicken, Guinea pig, Cow, Dog, Pig, Monkey, Zebrafish, African green monkey, Chinese hamster, Armenian hamster
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Rat
Dilution info	5 µg/mL
Notes	-

Species	Human
Dilution info	5 µg/mL
Notes	-

Expected

Species	Mouse

Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Sheep, Rabbit, Horse, Chicken, Guinea pig, Cow, Dog, Pig, Monkey, Zebrafish, African green monkey, Chinese hamster, Armenian hamster
Dilution info	-
Notes	-

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

Notes

Western blot protocol advice:

We recommend blocking with 2-5% BSA as we have found that use of 5% milk significantly reduces the band intensity for beta actin. Please see the comparison data in the images section. If milk block is required, we recommend using ab8224 mouse monoclonal [mAbcam 8224] to beta actin. Contact our Scientific Support team for more information or advice.

This antibody clone [mAbcam 8226] is manufactured by Abcam.

If you require this antibody in a particular buffer formulation or a particular conjugate for your experiments, please contact orders@abcam.com or you can find further information here.

Abcam is leading the way to address reproducibility in scientific research with our highly validated recombinant monoclonal and recombinant multiclonal antibodies. Search & select one of Abcam's thousands of recombinant alternatives to eliminate batch-variability and unnecessary animal use.

If you do not find a host species to meet your needs, our catalogue and custom Chimeric range provides scientists the specificity of Abcam's RabMAbs in the species backbone of your choice. Remember to also review our range of edited cell lines, proteins and biochemicals relevant to your target that may help you further your research goals.

Abcam antibodies are extensively validated in a wide range of species and applications, so please check the reagent specifications meet your scientific needs before purchasing. If you have any questions or bespoke requirements, simply visit the Contact Us page to send us an inquiry or contact our Support Team ahead of purchase.

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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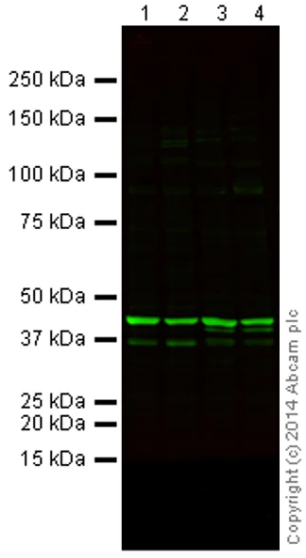
13 product images



Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226)

This blot was produced using a 4-12% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for 50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 5% Milk before being incubated with ab8226 overnight at 4°C. Antibody binding was detected using Goat Anti-Mouse IgG H&L (Alexa Fluor® 790) (ab175783) at a 1:10,000 dilution for 1hr at room temperature and then imaged using the Licor Odyssey CLx.

All lanes:
Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226) at 1/1000 dilution

Lane 1:
A431 (Human epidermoid carcinoma cell line) Whole Cell Lysate at 20 µg

Lane 2:
HEK293 (Human embryonic kidney cell line) Whole Cell Lysate at 20 µg

Lane 3:
NIH 3T3 (Mouse embryo fibroblast cell line) Whole Cell Lysate at 20 µg

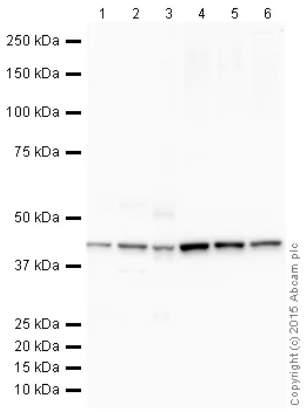
Lane 4:
PC12 (Rat adrenal gland pheochromocytoma cell line) Whole Cell Lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Mouse IgG H&L (Alexa Fluor® 790) (ab175783) at 1/10000 dilution

Predicted band size: 36 kDa, 41 kDa

Observed band size: 42 kDa



Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226)

This blot was produced using a 4-12% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for 50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 2% Bovine Serum Albumin before being incubated with ab8226 overnight at 4°C. Antibody binding was detected using ab205724, and visualised using ECL development solution ab133406.

All lanes:
Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226) at 1 µg/mL

Lane 1:
Liver (Human) Tissue Lysate at 10 µg

Lane 2:
Liver (Mouse) Tissue Lysate at 10 µg

Lane 3:
Liver (Rat) Tissue Lysate at 10 µg

Lane 4:
HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate at 10 µg

Lane 5:
NIH 3T3 (Mouse embryonic fibroblast cell line) Whole Cell Lysate at 10 µg

Lane 6:
PC12 (Rat adrenal pheochromocytoma cell line) Whole Cell Lysate at 10 µg

Secondary

All lanes:
Western blot - Donkey Anti-Mouse IgG H&L (HRP) (ab205724) at 1/2000 dilution

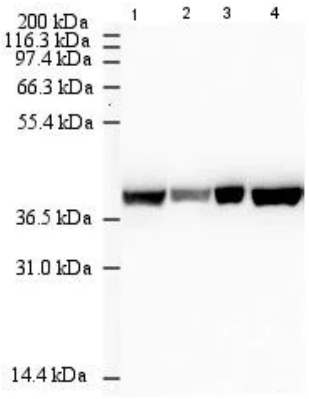
Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 36 kDa

Observed band size: 42 kDa

Exposure time: 15s



Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226)

Lane 1:
Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226) at 1/1000 dilution

Lane 2:
Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226) at 1/10000 dilution

Lanes 3 - 4:

Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226) at 1/500 dilution

Lanes 1 - 2:
HeLa (Human epithelial cell line from cervix adenocarcinoma) cell lysate at 20 µg

Lane 3:
HEK293 (Human epithelial cell line from embryonic kidney) cell lysate at 20 µg

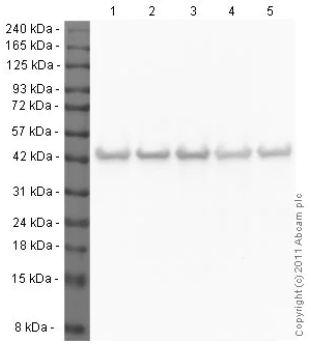
Lane 4:
NIH/3T3 (Mouse embryo fibroblast cell line) cell lysate at 20 µg

Secondary

All lanes:
Western blot - Rabbit Anti-Mouse IgG H&L (HRP) (ab6728) at 1/5000 dilution
Performed under reducing conditions.

Predicted band size: 41 kDa

Exposure time: 10s



Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226)

Western blot image using the Optiblot Reducing Electrophoresis Kit - 10 x 10 cm (4-20%) with the Prism Ultra Protein Ladder (ab116028) 5µl used. We recommend using our ECL substrate kit (ab65623).

All lanes:
Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226) at 1 µg/mL

Lane 1:
HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 2:
Jurkat (Human T cell leukemia cell line from peripheral blood) whole cell lysate at 20 µg

Lane 3:
A431 (Human epidermoid carcinoma cell line) whole cell lysate at 20 µg

Lane 4:
HEK293 (Human epithelial cell line from embryonic kidney) whole cell lysate at 20 µg

Lane 5:
HepG2 (Human liver hepatocellular carcinoma cell line) whole cell lysate at 20 µg

Secondary

All lanes:
HRP-conjugated goat anti-mouse IgG at 1/5000 dilution

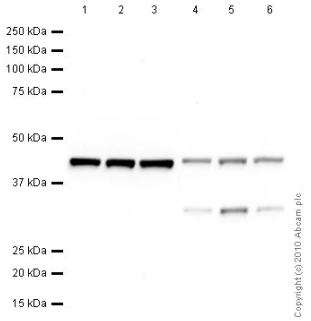
Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 41 kDa

Observed band size: 42 kDa

Exposure time: 10s



Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226)

All lanes:
Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226) at 1 µg/mL

Lanes 1 and 4:
HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 10 µg

Lanes 2 and 5:
Jurkat (Human T cell leukemia cell line from peripheral blood) whole cell lysate at 10 µg

Lanes 3 and 6:
NIH/3T3 (Mouse embryo fibroblast cell line) whole cell lysate at 10 µg

Secondary

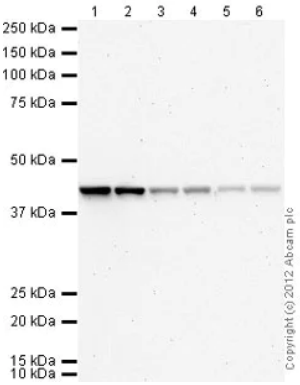
All lanes:
Goat polyclonal to Mouse IgG - H&L - Pre-Adsorbed (HRP) at 1/3000 dilution

Performed under reducing conditions.

Predicted band size: 41 kDa

Observed band size: 42 kDa

Exposure time: 8min



Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226)

All lanes:
Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226) at 1 µg/mL

All lanes:
HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate at 10 µg

Secondary

Lanes 1 - 2:
Western blot - Rabbit Anti-Mouse IgG H&L (Alkaline Phosphatase) (ab97043) at 1/5000 dilution

Lanes 3 - 4:
Western blot - Rabbit Anti-Mouse IgG H&L (Alkaline Phosphatase) (ab97043) at 1/20000 dilution

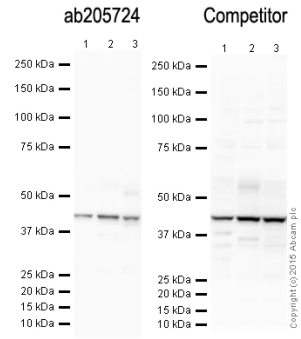
Lanes 5 - 6:
Western blot - Rabbit Anti-Mouse IgG H&L (Alkaline Phosphatase) (ab97043) at 1/50000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 36 kDa

Exposure time: 20min



Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226)

This blot was produced using a 4-12% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for 50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 2% Bovine Serum Albumin before being incubated with ab8226 overnight at 4°C. Antibody binding was detected using ab205724 (Left Image) and a competitor secondary (Right Image), and visualised using ECL development solution ab133406.

All lanes:
Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226) at 1 µg/mL

Lane 1:
Liver (Human) Tissue Lysate at 10 µg

Lane 2:
Liver (Mouse) Tissue Lysate at 10 µg

Lane 3:
Liver (Rat) Tissue Lysate at 10 µg

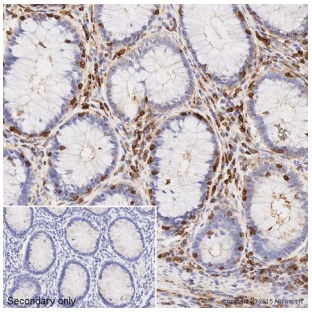
Secondary

All lanes:
ab205724 (Left Image) at 1/2000 and a competitor secondary (Right Image) at 1/2000. Notice the increased background of the competitor product.
Performed under reducing conditions.

Predicted band size: 36 kDa

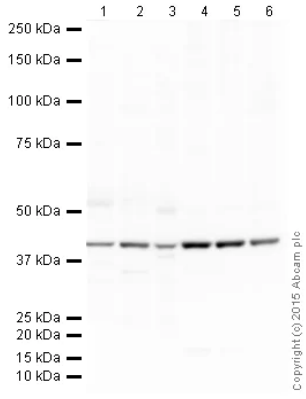
Observed band size: 42 kDa

Exposure time: 15s



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226)

IHC image of ab8226 staining beta Actin in human colon formalin fixed paraffin embedded tissue sections*, performed on a Leica Bond. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab8226, 0.1µg/ml working concentration, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. No primary antibody was used in the secondary only control (shown on the inset).
For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.
*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre



Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226)

This blot was produced using a 4-12% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for 50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 2% Bovine Serum Albumin before being incubated with ab8226 overnight at 4°C. Antibody binding was detected using ab205719, and visualised using ECL development solution ab133406.

All lanes:
Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226) at 1 µg/mL

Lane 1:
Liver (Human) Tissue Lysate at 10 µg

Lane 2:
Liver (Mouse) Tissue Lysate at 10 µg

Lane 3:
Liver (Rat) Tissue Lysate at 10 µg

Lane 4:
HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate at 10 µg

Lane 5:
NIH 3T3 (Mouse embryonic fibroblast cell line) Whole Cell Lysate at 10 µg

Lane 6:
PC12 (Rat adrenal pheochromocytoma cell line) Whole Cell Lysate at 10 µg

Secondary

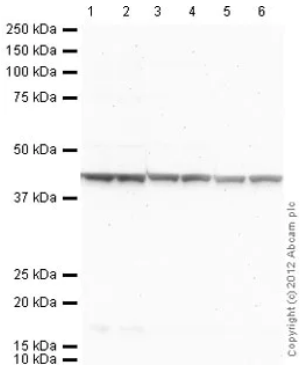
All lanes:
Western blot - Goat Anti-Mouse IgG H&L (HRP) (ab205719) at 1/5000 dilution
Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 36 kDa

Observed band size: 42 kDa

Exposure time: 10s



Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226)

All lanes:
Western blot - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226) at 1 µg/mL

All lanes:
HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate at 10 µg

Secondary

Lanes 1 - 2:
Western blot - Goat Anti-Mouse IgG H&L (Alkaline Phosphatase) (ab97020) at 1/5000 dilution

Lanes 3 - 4:
Western blot - Goat Anti-Mouse IgG H&L (Alkaline Phosphatase) (ab97020) at 1/20000 dilution

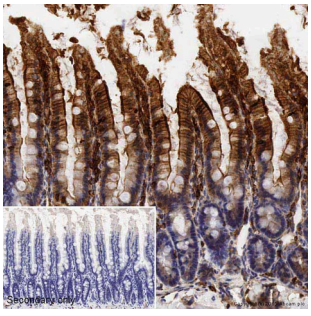
Lanes 5 - 6:
Western blot - Goat Anti-Mouse IgG H&L (Alkaline Phosphatase) (ab97020) at 1/50000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 36 kDa

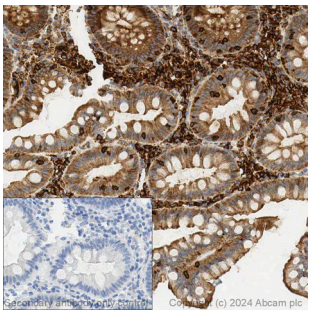
Exposure time: 4min



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226)

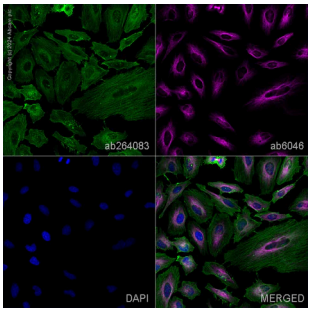
IHC image of ab8226 staining beta Actin in rat colon formalin fixed paraffin embedded tissue sections, performed on a Leica Bond. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab8226, 0.5µg/ml working concentration, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. No primary antibody was used in the secondary only control (shown on the inset).

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226)

Immunohistochemical analysis of formalin fixed paraffin embedded human colon labelling beta actin with ab8226 at a concentration of 0.06 µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with an OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was conducted for 32 mins at 100°C with ULTRA cell conditioning solution (CC1, pH 8.5). ab8226 anti-beta actin antibody [mAbcam 8226] was incubated at 37°C for 16 mins. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.



Immunocytochemistry/ Immunofluorescence - Anti-beta Actin antibody [mAbcam 8226] - Loading Control (ab8226)

This data was developed using the same antibody clone in a different buffer formulation containing only PBS (ab264083). ab264083 staining beta Actin in HeLa cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% PBS-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 ab264083 at 5µg/ml and ab6046, Rabbit polyclonal to beta Tubulin - Loading Control. Cells were then incubated with ab150117, Goat polyclonal Secondary Antibody to Mouse IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (shown in green) and ab150080, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 594) at 1/1000 dilution (shown in pseudocolour magenta). Nuclear DNA was labelled with DAPI (shown in blue). Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a maximum intensity projection of confocal sections is shown.