abcam

ab179513

Anti-beta Tubulin antibody [EPR16774] - Loading Control

Anti-beta Tubulin antibody [EPR16774] (ab179513) is a rabbit monoclonal antibody detecting beta Tubulin in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Chicken, Cow, Dog, Drosophila, Human, Mouse, Rat, Monkey, Xenopus, Zebrafish**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 70 publications

Lab Essentials | Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR16774
Purification technique	Affinity purification Protein A
Concentration	2.151 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Recombinant full length protein - Human
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	African green monkey
Dilution info	1/1000
Notes	-

Species	Drosophila melanogaster
Dilution info	1/1000
Notes	-

Species	Zebrafish
Dilution info	1/1000
Notes	-

Species	Xenopus tropicalis
Dilution info	1/1000
Notes	-

Species	Chicken
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Species	Dog
Dilution info	1/1000
Notes	-

Species	Cow
Dilution info	1/1000
Notes	-

Predicted

Species	Monkey
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/150
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Rat, Mouse, African green monkey, Drosophila melanogaster, Zebrafish, Xenopus tropicalis, Chicken, Dog, Cow
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Monkey
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Rat
Dilution info	1/250
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	1/250
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/250
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Expected

Species	African green monkey, Drosophila melanogaster, Zebrafish, Xenopus tropicalis, Chicken, Dog, Cow
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Monkey
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Expected

Species	Rat, African green monkey, Drosophila melanogaster, Zebrafish, Xenopus tropicalis, Chicken, Dog, Cow
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Monkey
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

Target data

See full target information TUBB

Function	Tubulin is the major constituent of microtubules, a cylinder consisting of laterally associated linear protofilaments composed of alpha- and beta-tubulin heterodimers. Microtubules grow by the addition of GTP-tubulin dimers to the microtubule end, where a stabilizing cap forms. Below the cap, tubulin dimers are in GDP-bound state, owing to GTPase activity of alpha-tubulin.

Storage

Shipped at conditions	Conditional Ambient
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

What is this antibody validated in?
Anti-beta Tubulin antibody [EPR16774] (ab179513) 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 African green monkey, Chicken, Cow, Dog, Drosophila melanogaster, Human, Mouse, Rat, , Xenopus tropicalis, Zebrafish samples.

What is the molecular weight of beta Tubulin?
Anti-beta Tubulin [EPR16774] (ab179513) specifically detects a band for beta Tubulin (UniProt: Q9BVA1) at a molecular weight of 50kDa.

Trusted by the scientific community
Anti-beta Tubulin [EPR16774] (ab179513) was first used in a scientific publication in 2014 and has been cited over 70 times in peer-reviewed journals.

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

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

Activity summary	Beta tubulin also known as beta-tubulin or B-tubulin is a globular protein with a molecular weight of approximately 50 kDa. It is a major component of microtubules which are cylindrical structures vital for maintaining cell shape and enabling intracellular transport. This protein is expressed widely in eukaryotic cells and plays a role in mitosis and meiosis by forming the spindle apparatus important for chromosome separation during cell division. The size of beta tubulin allows it to effectively polymerize with alpha tubulin forming heterodimers which are the building blocks of the microtubule network.
Biological function summary	This protein contributes significantly to the dynamic instability of microtubules allowing rapid assembly and disassembly which is essential for cellular processes like motility signaling and maintaining the cell's architecture. Beta tubulin operates as part of the tubulin family which includes several related proteins within microtubule structures. The beta-tubulin molecules in microtubules are critical for the interactions with microtubule-associated proteins (MAPs) and motor proteins such as kinesin and dynein influencing trafficking and positioning of organelles within the cell.
Pathways	Beta tubulin plays key roles in the mitotic spindle assembly checkpoint ensuring accurate chromosome segregation. It is actively involved in the microtubule pathway and has associations with signaling pathways such as the Wnt signaling pathway which affects cell growth and differentiation. Through these pathways beta tubulin interacts with proteins like tau and MAP2 which stabilize microtubules to control their functional dynamics within the cell.
Associated diseases and disorders	Mutations or dysregulations in beta tubulin can affect neurological and proliferative conditions such as neurodegenerative diseases and cancer. Beta tubulin is notably linked to Alzheimer's disease where tau protein tangles disrupt normal microtubule function. It also connects to diseases like paclitaxel-resistant cancer where altered beta tubulin isoform expression can lead to chemotherapy resistance. The interaction of beta tubulin with tau and alpha tubulin provides further insight into etiological mechanisms of these conditions.

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.

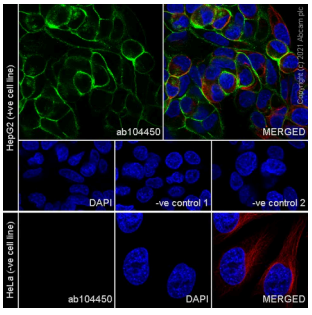
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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34 product images



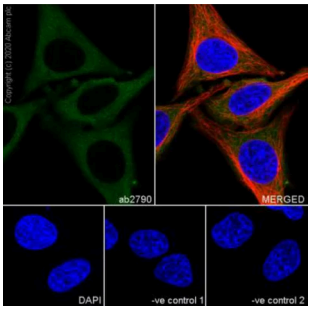
Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

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

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HepG2 cells labelling CEACAM1 + CEACAM3 + CEACAM6 with ab104450 at 1/250 dilution followed by secondary antibody ab150117 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (green).

ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used as a counterstain at a 1/200 dilution followed by a secondary antibody ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) used at a 1/1000 dilution (red).
Confocal image showing membranous staining in HepG2 cell line.
Negative control: HeLa (PMID: 11580753).

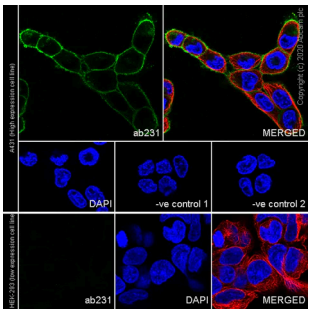
Nuclear DNA was labelled with DAPI (shown in blue).



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Immunocytochemistry/ Immunofluorescence staining of HeLa cells using rabbit Anti-beta Tubulin antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HeLa cells labelling Hsp27 with ab2790 at 1/100 dilution, followed by AlexaFluor® 488-conjugated Goat anti-Mouse secondary antibody (ab150113) at 1/1000 dilution at RT for 45 min. ab179513 Anti-beta Tubulin, used as a counterstain at 1/200 dilution, was co-incubated with ab9509 overnight at 4° C, followed by Alexa Fluor® 594 Goat Anti-Rabbit secondary (ab150080) at 1/1000 dilution at RT for 45 min. Nucleus were visualized using DAPI.



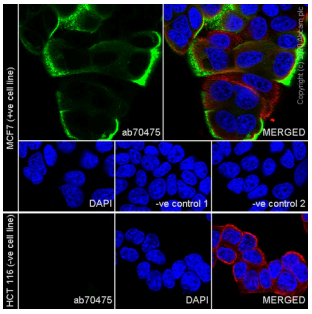
Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Immunocytochemistry/ Immunofluorescence staining of A431 cells using rabbit Anti-beta Tubulin antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized A431 cells labelling EGFR with ab231 at 1/50 dilution followed by secondary antibody ab150117 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (green).

ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used as a counterstain at a 1/200 dilution followed by a secondary antibody ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) used at a 1/1000 dilution (red).
Confocal image showing strong membranous and weak cytoplasmic staining in A431 cells.
Low expression control: HEK-293 (PMID: 26368334).

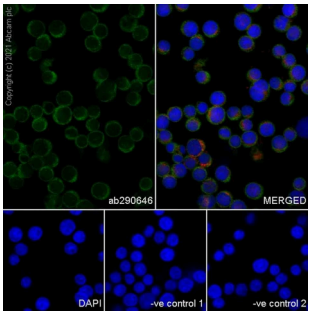
Nuclear DNA was labelled with DAPI (shown in blue).



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Immunocytochemistry/ Immunofluorescence staining of HCT 116 (PMID: 14998492) using rabbit Anti-beta Tubulin antibody

MCF7/ HCT 116 cells were fixed in 4% PFA and permeabilized with 0.1% Triton X-100. Primary antibody, ab70475 at 1:100 was incubated overnight at 4° C, followed by AlexaFluor® 488-conjugated Goat anti-Mouse secondary antibody (ab150113) at 1/1000 dilution at RT for 45 min. ab179513 Anti-beta Tubulin, used as a counterstain at 1/200 dilution, was co-incubated with ab9509 overnight at 4° C, followed by Alexa Fluor® 594 Goat Anti-Rabbit secondary (ab150080) at 1/1000 dilution at RT for 45 min. Nucleus were visualized using DAPI. Confocal image showing membranous and cytoplasmic staining in MCF7 cells. Negative control: HCT 116 (PMID: 14998492)

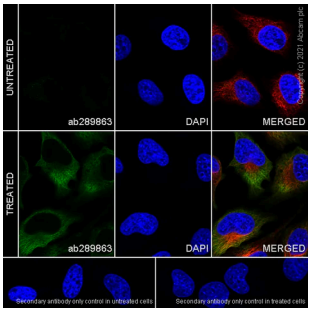


Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Immunocytochemistry/ Immunofluorescence staining of Jurkat (human T cell leukemia T lymphocyte) using rabbit Anti-beta Tubulin antibody

Immunofluorescent analysis of 80% Methanol-fixed, 0.1% TritonX-100 permeabilized Jurkat (human T cell leukemia T lymphocyte) cells labeling SHP2 with ab290646 at 1/50 (20.18 µg/ml)

dilution, followed by ab150117 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 µg/ml) dilution (Green). Confocal image showing cytoplasmic staining in Jurkat cell line is observed. ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used to counterstain tubulin at 1/200 10 µg/ml dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150117 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 µg/ml dilution.



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

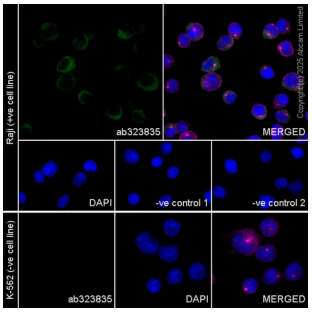
Beta Tubulin Immunocytochemistry/ Immunofluorescence staining of HeLa cells using rabbit Anti-beta Tubulin antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HeLa cells labeling alpha Tubulin (acetyl K40) with ab289863 at 1/100 dilution (10.81 µg/ml), followed by ab96971 Goat Anti-Rat IgG Fc (DyLight® 488) preadsorbed antibody at 1/500 dilution (Green). Confocal image showing increased cytoplasmic staining in HeLa cells treated with Trichostatin A (500 ng/ml) for 4 hours.

ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used to counterstain tubulin at 1/200 dilution (Red).

The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: PBS was used instead of primary antibody followed by secondary antibody is ab96971 Goat Anti-Rat IgG Fc (DyLight® 488) preadsorbed at 1/500 dilution.



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

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

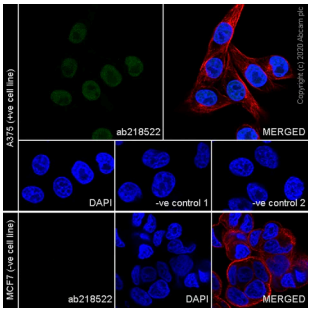
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Raji (human Burkitt's lymphoma B lymphocyte) cells labelling AICDA with ab323835 at 1/100 (10 ug/ml) dilution, followed by ab150117 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 ug/ml) dilution (Green).

Confocal image showing cytoplasmic staining in Raji cell line (shown in green). The counterstain was observed in magenta. Nuclear DNA was labelled with DAPI (shown in blue).
Negative control: K-562.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used to counterstain tubulin at 1/200 (10 ug/ml) dilution, followed by ab150088 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) preadsorbed at 1/1000 (2 ug/ml) dilution (Magenta).

-ve control 1: ab323835 at a 1/100 dilution followed by ab150088 at a 1/1000 dilution.

-ve control 2: ab179513 at a 1/200 dilution followed by ab150117 at a 1/1000 dilution.

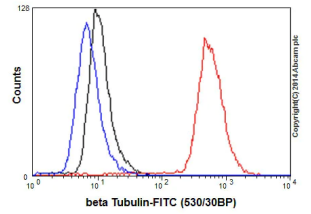


Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

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

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized A375 (human malignant melanoma epithelial cell) cells labelling SOX10 with ab218522 at 1/50 dilution followed by secondary antibody ab150113 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) at 1/1000 dilution (green).

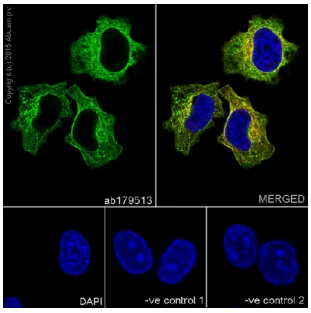
ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used as a counterstain at a 1/200 dilution followed by a secondary antibody ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at a 1/1000 dilution (red).
Confocal image showing nuclear staining in A375 cells.
Negative control: MCF7 (PMID: 23799842).
Nuclear DNA was labelled with DAPI (shown in blue).



Flow Cytometry (Intracellular) - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

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

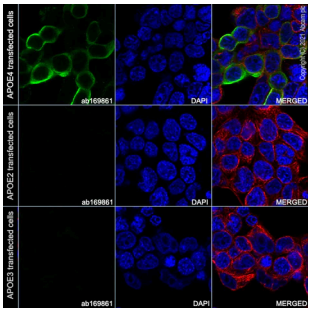
Intracellular flow cytometric analysis of 2% paraformaldehyde-fixed HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling beta Tubulin with ab179513 at 1/150 dilution (red) compared with a rabbit monoclonal IgG isotype control (black) and a unlabelled control (cells without incubation with primary antibody and secondary antibody; blue). Goat anti rabbit IgG (FITC) at 1/150 dilution was used as the secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

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

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling beta Tubulin with ab179513 at 1/1000 dilution, followed by anti-rabbit Alexa Fluor® 488 (ab150077) secondary antibody at 1/500 dilution (green). Confocal image showing cytoplasmic staining on HeLa cell line. The nuclear counter stain is DAPI (blue). Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution and anti-mouse AlexaFluor® 594 (ab150120) at 1/500 dilution (red).
The negative controls are as follows;
-ve control 1: ab179513 at 1/1000 dilution followed by anti-mouse AlexaFluor® 594 (ab150120) at 1/500 dilution.
-ve control 2: ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution followed by anti-rabbit Alexa Fluor® 488 (ab150077) at 1/500 dilution.



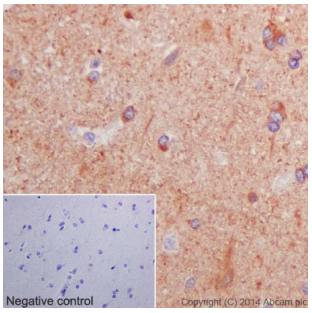
Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Immunocytochemistry/ Immunofluorescence staining of HEK-293T cells transfected with a human APOE4(C112R) expression vector containing a myc tag using rabbit Anti-beta Tubulin antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized transfected 293T (human embryonic kidney epithelial cell) cells labelling Apolipoprotein E4 with ab169861 at 1/50 dilution, followed by ab150117 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution(Green).

Confocal image showing cytoplamic staining in HEK-293T cells transfected with a human APOE4(C112R) expression vector containing a myc tag. (shown in green). The counterstain was observed in red. Nuclear DNA was labelled with DAPI (shown in blue).

ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used to counter stain tubulin at a 1/200 dilution followed by ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at a 1/500 dilution (Red).

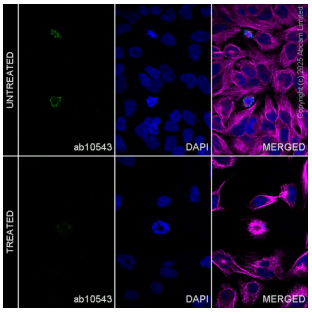


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

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

Immunohistochemical analysis of paraffin-embedded Human glioma tissue labeling beta Tubulin with ab179513 at 1/250 dilution, followed by Anti-Rabbit HRP (ab97051) at 1/500 dilution. Cytoplasmic staining on human glioma is observed. Counter stained with Hematoxylin.
Negative control: Using PBS instead of primary antibody, secondary antibody is Anti-Rabbit HRP (ab97051) at 1/500 dilution.

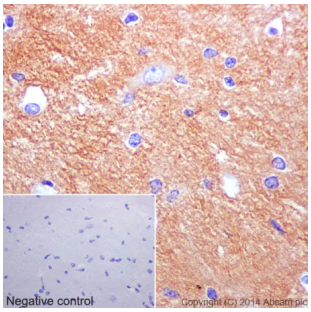
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Immunocytochemistry/ Immunofluorescence staining of HeLa (human cervical adenocarcinoma epithelial cell) using rabbit Anti-beta Tubulin antibody

Immunofluorescent analysis of 4% Paraformaldehyde fixed, 0.1% Triton X-100 permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells with ab10543 at 1/8000 dilution followed by ab150157 Goat Anti-Rat IgG H&L (Alexa Fluor® 488) antibody at 1/1000 (Green). ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used as a counterstain at a 1/200 dilution followed by ab150088 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) preadsorbed at a 1/1000 dilution (Magenta). Confocal image showing nuclear staining in HeLa cells (shown in green) at metaphase, the signal is decreased after λ Protein phosphatase treatment at 30☒ for 2 hours. The counterstain was observed in magenta. Nuclear DNA was labelled with DAPI (shown in blue). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

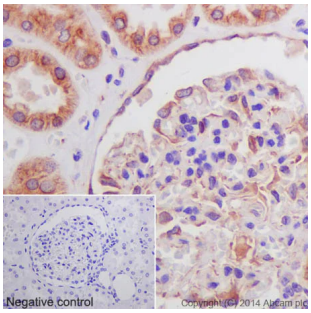


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

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

Immunohistochemical analysis of paraffin-embedded Human cerebral cortex tissue labeling beta Tubulin with ab179513 at 1/250 dilution, followed by Anti-Rabbit HRP (ab97051) at 1/500 dilution. Cytoplasmic staining on neurons of human cerebral cortex is observed. Counter stained with Hematoxylin.
Negative control: Using PBS instead of primary antibody, secondary antibody is Anti-Rabbit HRP (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

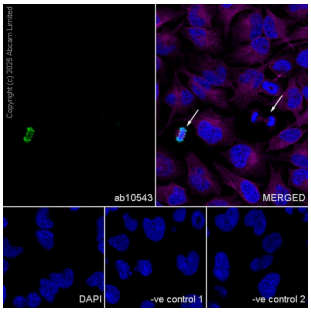


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

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

Immunohistochemical analysis of paraffin-embedded Human kidney tissue labeling beta Tubulin with ab179513 at 1/250 dilution, followed by Anti-Rabbit HRP (ab97051) at 1/500 dilution. Cytoplasmic staining on tubules and the glomerulus of human kidney is observed. Counter stained with Hematoxylin.
Negative control: Using PBS instead of primary antibody, secondary antibody is Anti-Rabbit HRP (ab97051) at 1/500 dilution.

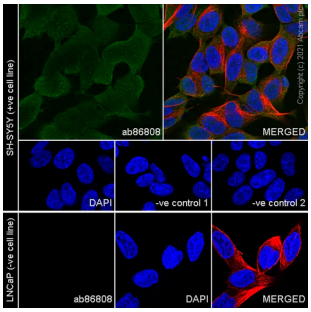
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Immunocytochemistry/ Immunofluorescence staining of HeLa (human cervical adenocarcinoma epithelial cell) using rabbit Anti-beta Tubulin antibody

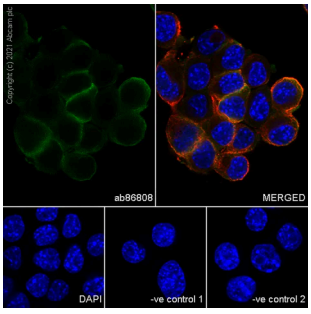
Immunofluorescent analysis of 4% Paraformaldehyde fixed, 0.1% Triton X-100 permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells with ab10543 at 1/8000 dilution followed by ab150157 Goat Anti-Rat IgG H&L (Alexa Fluor® 488) antibody at 1/1000 (Green). ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used as a counterstain at a 1/200 dilution followed by ab150088 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) preadsorbed at a 1/1000 dilution (Magenta). Confocal image showing nuclear staining in HeLa cells at metaphase (shown in green), and no staining at anaphase. The counterstain was observed in magenta. Nuclear DNA was labelled with DAPI (shown in blue). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Immunocytochemistry/ Immunofluorescence staining of SH-SY5Y (human neuroblastoma epithelial cell) cells using rabbit Anti-beta Tubulin antibody

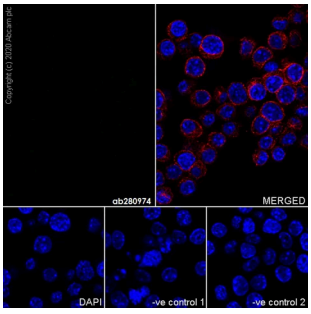
Immunofluorescent analysis of 4% Paraformaldehyde fixed, 0.1% Triton X-100 permeabilized SH-SY5Y cells with ab86808 at 1/50 dilution followed by ab150113 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used for counterstain at a 1/200 dilution followed by ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at 1/500 dilution (Red). Nuclear DNA was labelled with DAPI (shown in blue) Confocal image showing cytoplasmic and weak nuclear staining in SH-SY5Y cells and no staining in LNCaP cells.
Negative control: LNCaP(PMID: 17929277)



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Immunocytochemistry/ Immunofluorescence staining of Neuro-2a (mouse neuroblastoma neuroblast) cells using rabbit Anti-beta Tubulin antibody

Immunofluorescent analysis of 4% Paraformaldehyde fixed, 0.1% Triton X-100 permeabilized Neuro-2a cells with ab86808 at 1/50 dilution followed by ab150113 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used for counterstain at a 1/200 dilution followed by ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at 1/500 dilution (Red). Nuclear DNA was labelled with DAPI (shown in blue)
Confocal image showing mainly cytoplasmic staining in Neuro-2a cells.



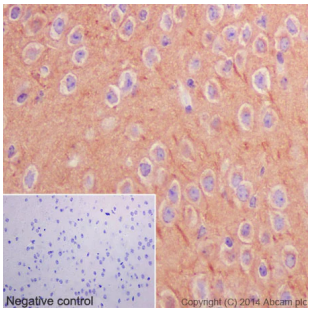
Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

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

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized RAW 264.7 cells labelling Mouse IgG1 with ab280974 at 1/20 dilution, followed by ab150113 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used to counterstain tubulin at 1/200 dilution followed by ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at 1/1000 dilution (Red). The nuclear counterstain was DAPI (Blue).
Confocal image showing **no staining** in RAW 264.7 cells.

Negative control 1: ab280974 at a 1/20 dilution followed by ab150080 at a 1/1000 dilution.

Negative control 2: ab179513 at a 1/200 dilution followed by ab150113 at a 1/1000 dilution.

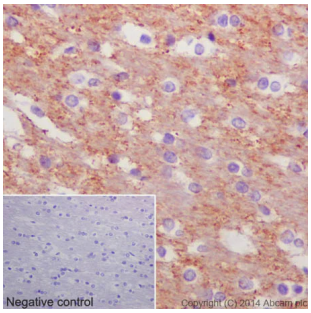


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

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

Immunohistochemical analysis of paraffin-embedded Mouse cerebral cortex tissue labeling beta Tubulin with ab179513 at 1/250 dilution, followed by Anti-Rabbit HRP (ab97051) at 1/500 dilution. Cytoplasm staining on neurons of mouse cerebral cortex is observed. Counter stained with Hematoxylin.
Negative control: Using PBS instead of primary antibody, secondary antibody is Anti-Rabbit HRP (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

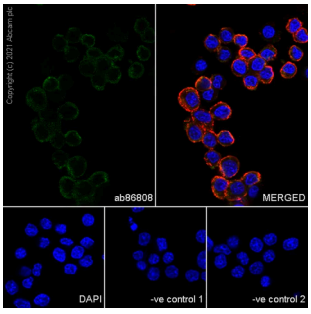


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

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

Immunohistochemical analysis of paraffin-embedded Rat cerebral cortex tissue labeling beta Tubulin with ab179513 at 1/250 dilution, followed by Anti-Rabbit HRP (ab97051) at 1/500 dilution. Cytoplasm staining on neurons of rat cerebral cortex is observed. Counter stained with Hematoxylin.
Negative control: Using PBS instead of primary antibody, secondary antibody is Anti-Rabbit HRP (ab97051) at 1/500 dilution.

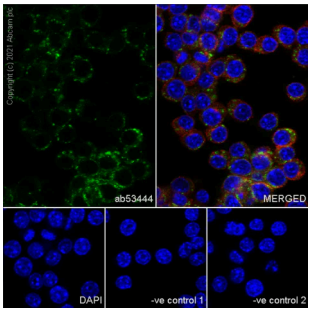
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Immunocytochemistry/ Immunofluorescence staining of PC-12 (rat adrenal gland pheochromocytoma) cells using rabbit Anti-beta Tubulin antibody

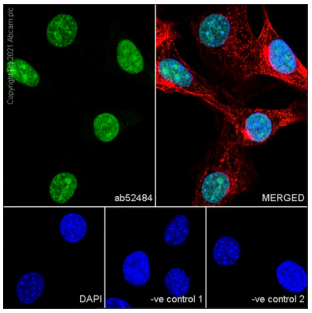
Immunofluorescent analysis of 4% Paraformaldehyde fixed, 0.1% Triton X-100 permeabilized PC-12 cells with ab86808 at 1/50 dilution followed by ab150113 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used for counterstain at a 1/200 dilution followed by ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at 1/500 dilution (Red). Nuclear DNA was labelled with DAPI (shown in blue) Confocal image showing mainly cytoplasmic staining in PC-12 cells



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

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

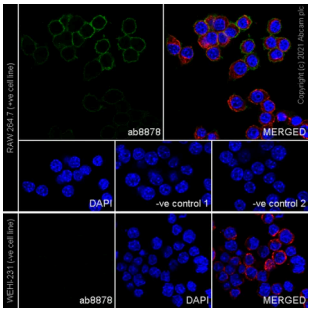
RAW 264.7 cells were fixed in 4% PFA and permeabilized with 0.1% Triton X-100. Primary antibody, ab53444 at 1:50 was incubated overnight at 4° C, followed by AlexaFluor® 488-conjugated Goat anti-Rat secondary antibody (ab150157) at 1/1000 dilution at RT for 45 min. ab179513 Anti-beta Tubulin, used as a counterstain at 1/200 dilution, was co-incubated with ab53444 overnight at 4° C, followed by Alexa Fluor® 594 Goat Anti-Rabbit secondary (ab150080) at 1/1000 dilution at RT for 45 min. Nucleus were visualized using DAPI. Confocal image showing cytoplasmic staining in RAW 264.7 cell line.



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Immunocytochemistry/ Immunofluorescence staining of NIH/3T3 cells using rabbit Anti-beta Tubulin antibody

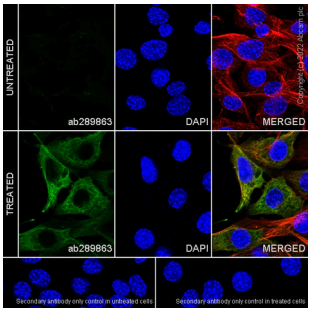
NIH/3T3 cells were fixed in 100% methanol and permeabilized with 0.1% Triton X-100. Primary antibody, ab52484 at 1:2000 was incubated overnight at 4° C, followed by AlexaFluor® 488-conjugated Goat anti-mouse secondary antibody (ab150117) at 1/1000 dilution at RT for 45 min. ab179513 Anti-beta Tubulin, used as a counterstain at 1/200 dilution, was co-incubated with ab52484 overnight at 4° C, followed by Alexa Fluor® 594 Goat Anti-Rabbit secondary (ab150080) at 1/1000 dilution at RT for 45 min. Nucleus were visualized using DAPI.



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

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

Confocal image showing membranous staining in RAW 264.7 cells. RAW 264.7, WEHI-231 and THP-1 cells were fixed in 4% PFA and permeabilized with 0.1% Triton X-100. Primary antibody, ab8878 at 1:50 was incubated overnight at 4° C, followed by AlexaFluor® 488- conjugated Goat anti-Rat secondary antibody (ab150157) at 1/1000 dilution at RT for 45 min. ab179513 Anti-beta Tubulin, used as a counterstain at 1/200 dilution, was co-incubated with ab8878 overnight at 4° C, followed by Alexa Fluor® 594 Goat Anti-Rabbit secondary (ab150080) at 1/1000 dilution at RT for 45 min. Nucleus were visualized using DAPI. Negative control: WEHI-231 (PMID: 2457584)



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Immunocytochemistry/ Immunofluorescence staining of NIH/3T3 cells using rabbit Anti-beta Tubulin antibody

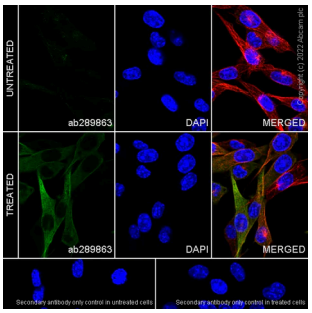
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized NIH/3T3 cells labeling alpha Tubulin (acetyl K40) with ab289863 at 1/100 dilution (10.81 µg/ml), followed by ab96971 Goat Anti-Rat IgG Fc (DyLight® 488) preadsorbed antibody at 1/500 dilution (Green).

Confocal image showing increased cytoplasmic staining in NIH/3T3 cells treated with Trichostatin A (500 ng/ml) for 4 hours. ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used to

counterstain tubulin at 1/200 dilution (Red).

The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: PBS was used instead of primary antibody followed by secondary antibody is ab96971 Goat Anti-Rat IgG Fc (DyLight® 488) preadsorbed at 1/500 dilution.



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

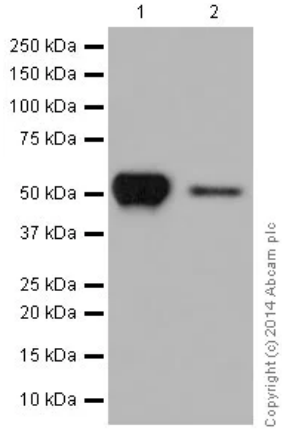
Beta Tubulin Immunocytochemistry/ Immunofluorescence staining of C6 cells using rabbit Anti-beta Tubulin antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized C6 cells labeling alpha Tubulin (acetyl K40) with ab289863 at 1/100 dilution (10.81 µg/ml), followed by ab96971 Goat Anti-Rat IgG Fc (DyLight® 488) preadsorbed antibody at 1/500 dilution (Green).

Confocal image showing increased cytoplasmic staining in C6 cells treated with Trichostatin A (500 ng/ml) for 4 hours. ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used to counterstain tubulin at 1/200 dilution (Red).

The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: PBS was used instead of primary antibody followed by secondary antibody is ab96971 Goat Anti-Rat IgG Fc (DyLight® 488) preadsorbed at 1/500 dilution.



Western blot - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Western blot staining using rabbit Anti-beta Tubulin antibody

Blocking/Dilution buffer: 5% NFDM/TBST.

The amino acid sequence of ab179513 immunogen is identical to those of tubulin beta 2A, 2B, 3, 4A, 4B, 5, 6 and 8 at the same region.

All lanes:
Western blot - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513) at 1/2000 dilution

Lane 1:
Human fetal brain lysates at 10 µg

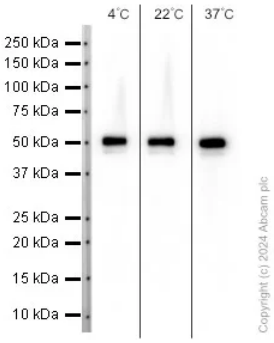
Lane 2:
Human fetal kidney lysates at 10 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 49 kDa

Observed band size: 50 kDa



Western blot - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Western blot staining of Jurkat whole cell lysate using rabbit Anti-beta Tubulin antibody

This blot was produced using 4-20% SDS-PAGE containing 15 µg of Jurkat whole cell lysate per lane at 150V for 1hr before being transferred onto a 0.45 µm PVDF membrane at 75V for 1hr. The membrane was then blocked for 1hr using 5% NFDM/TBST, then incubated with ab179513 (1/1000) at room temperature for 1hr. After being washed three times in TBST, the membrane was incubated with Peroxidase conjugated goat anti-rabbit IgG (H+L) (ab97051) at 1/20,000 dilution for 1hr at room temperature. The membrane was washed three times again. Then the signal was developed using the ECL technique.

ab179513 was stored at a range of temperatures (+4°C, +22°C, +37°C) for 1 week before being tested in WB. The image shows the band intensity remains relatively constant across all storage temperatures, demonstrating that antibody activity is not affected under these conditions. This data was generated as part of a structured antibody stability study supporting Abcam’ s transition from cold⊠chain to ambient shipping.

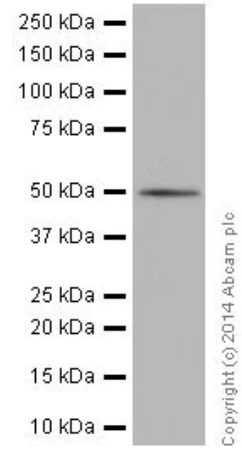
All lanes:
Western blot - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513) at 1/1000 dilution

All lanes:
Jurkat whole cell lysate at 15 µg with NDFM/TBST

Secondary

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

Exposure time: 3s



Western blot - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Western blot staining of Human beta I Tubulin recombinant protein using rabbit Anti-beta Tubulin antibody

Blocking/Dilution buffer: 5% NFDM/TBST.

The immunogen of ab179513 has 67% identities with beta I Tubulin. The WB image shows it cross-reacts with beta I Tubulin.
Human beta I Tubulin is an in house recombinant protein (aa1-451) with a proprietary tag.

All lanes:
Western blot - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513) at 1/1000 dilution

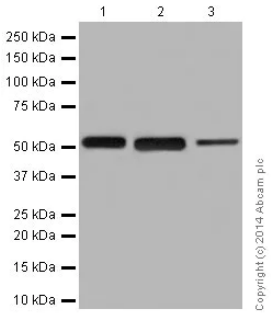
All lanes:
Human beta I Tubulin recombinant protein at 0.01 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/1000 dilution

Predicted band size: 49 kDa

Observed band size: 50 kDa



Western blot - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Western blot staining using rabbit Anti-beta Tubulin antibody

Blocking/Dilution buffer: 5% NFDM/TBST.

The amino acid sequence of ab179513 immunogen is identical to those of tubulin beta 2A, 2B, 3, 4A, 4B, 5, 6 and 8 at the same region.

All lanes:
Western blot - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513) at 1/2000 dilution

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

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

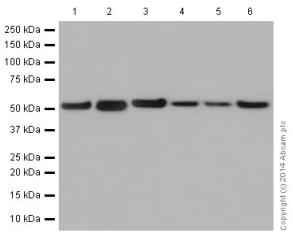
Lane 3:
A431 (Human epidermoid carcinoma) whole cell lysates at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/1000 dilution

Predicted band size: 49 kDa

Observed band size: 50 kDa



Western blot - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Western blot staining using rabbit Anti-beta Tubulin antibody

Blocking/Dilution buffer: 5% NFDM/TBST.

The amino acid sequence of ab179513 immunogen is identical to those of tubulin beta 2A, 2B, 3, 4A, 4B, 5, 6 and 8 at the same region.

All lanes:
Western blot - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513) at 1/2000 dilution

Lane 1:
Mouse brain lysates at 10 µg

Lane 2:
Rat brain lysates at 10 µg

Lane 3:
C6 (Rat glial tumor cells) whole cell lysates at 10 µg

Lane 4:

RAW 264.7 (Mouse macrophage cells transformed with Abelson murine leukemia virus) whole cell lysates at 10 µg

Lane 5:
PC-12 (Rat adrenal gland pheochromocytoma) whole cell lysates at 10 µg

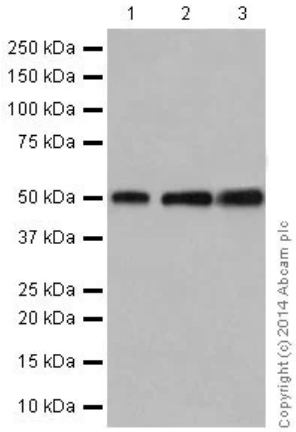
Lane 6:
NIH/3T3 (Mouse embyro fibroblast cells) whole cell lysates at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/1000 dilution

Predicted band size: 49 kDa

Observed band size: 50 kDa



Western blot - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Western blot staining using rabbit Anti-beta Tubulin antibody

Blocking/Dilution buffer: 5% NFDM/TBST.

The amino acid sequence of ab179513 immunogen is identical to those of tubulin beta 2A, 2B, 3, 4A, 4B, 5, 6 and 8 at the same region.

All lanes:
Western blot - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513) at 1/2000 dilution

Lane 1:
Zebrafish whole lysates at 20 µg

Lane 2:
Xenopus tropicalis lysates at 20 µg

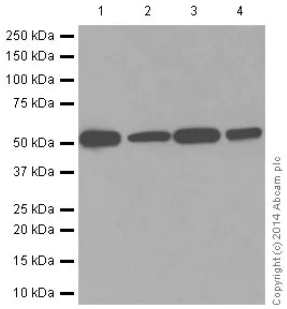
Lane 3:
Drosophila whole lysates at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/1000 dilution

Predicted band size: 49 kDa

Observed band size: 50 kDa



Western blot - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513)

Beta Tubulin Western blot staining using rabbit Anti-beta Tubulin antibody

Blocking/Dilution buffer: 5% NFDM/TBST.

The amino acid sequence of ab179513 immunogen is identical to those of tubulin beta 2A, 2B, 3, 4A, 4B, 5, 6 and 8 at the same region.

All lanes:
Western blot - Anti-beta Tubulin antibody [EPR16774] - Loading Control (ab179513) at 1/2000 dilution

Lane 1:
UMNSAH/DF-1 (Transformed chicken embyronic fibroblast cells) whole cell lysates at 20 µg

Lane 2:
MDCK (Canine kidney cell line) whole cell lysates at 20 µg

Lane 3:
MDBK (Bovine kidney cell line) whole cell lysates at 20 µg

Lane 4:
COS-1 (African green monkey kidney fibroblast-like cell line) whole cell lysates at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/1000 dilution

Predicted band size: 49 kDa

Observed band size: 50 kDa

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