abcam

ab209348

Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR16772
Purification technique	Affinity purification Protein A
Concentration	0.996 - 1.048 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	-

Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-

Notes	ab199376-Rabbit monoclonal IgG (Low endotoxin, Azide free), is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information TUBA4A acK40

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	Blue Ice
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab209348 is the carrier-free version of ab179484.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

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

Compatibility

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

Supplementary info

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

Activity summary	Alpha tubulin also known as DM1A is an important component of the structural unit called microtubules. This protein weighs approximately 50 kDa and acts as a building block in the cytoskeleton. Alpha tubulin is expressed in various cell types across many organisms playing a fundamental role in maintaining cell shape and enabling intracellular transport. Researchers often acetylate alpha tubulin to study post-translational modifications and its effects on microtubule dynamics.
Biological function summary	Alpha tubulin combines with beta tubulin to form the tubulin dimer which is the basic unit of microtubule polymerization. These dimers assemble into microtubule filaments integral in numerous cellular processes. As part of the cytoskeleton network alpha tubulin facilitates roles in mitosis and meiosis providing spindle structures necessary for chromosome separation. Its participation in cell signaling

	pathways is noteworthy as it interacts with motor proteins like kinesins and dyneins to aid cellular activities.
Pathways	Alpha tubulin holds critical roles in microtubule-associated processes within the cytoskeleton and intracellular transport pathways. It interacts with the MAP (microtubule-associated protein) family which modulates microtubule stability and impacts cell division and trafficking. Moreover the microtubule pathway involves proteins like tau which bind to stabilize microtubules and are implicated in cellular dynamics and signaling.
Associated diseases and disorders	Alpha tubulin is relevant in neurodegenerative diseases such as Alzheimer's disease and cancer. Aberrant modifications or mutations in alpha tubulin or associated proteins like tau can disrupt microtubule stability contributing to pathological conditions. In cancer altered expression of alpha tubulin affects cell division leading to tumor progression and chemoresistance. Researchers study alpha tubulin using techniques such as immunofluorescence with Alexa fluor 555 to understand its role in disease better.

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

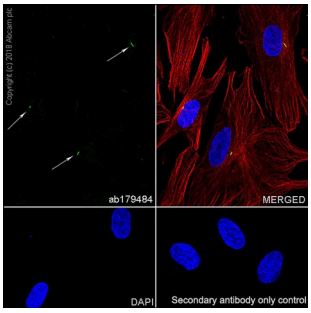
We do not recommend this combination. It is not covered by our product promise.

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.

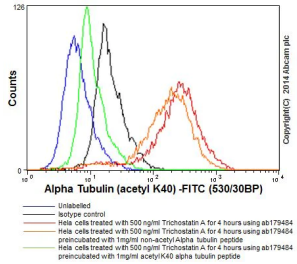
9 product images



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] - BSA and Azide free (ab209348)

Alpha Tubulin (acetyl K40) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

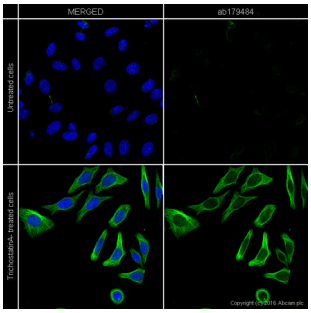
ab179484 staining alpha Tubulin in HFF-1 (Human skin fibroblast) cell line by ICC/IF (Immunocytochemistry/Immunofluorescence). The cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% TritonX-100. Samples were incubated with primary antibody at 1:20000 dilution. An AlexaFluor®488 Goat anti-Rabbit (ab150077) was used as a secondary antibody at 1:1000 dilution. An Anti-Alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594), ab195889 was used as a counterstain at 1:200 dilution. DAPI was used as a nuclear counterstain. Confocal image showing cilia (arrows) staining in HFF-1 cells treated with starvation for 48 hours.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179484).



Flow Cytometry (Intracellular) - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] - BSA and Azide free (ab209348)

Alpha Tubulin (acetyl K40) Flow Cytometry (Intracellular) staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

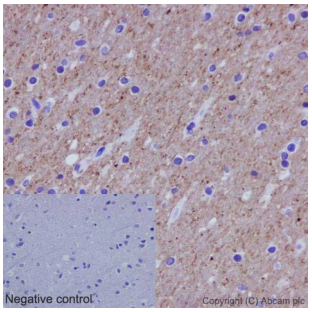
Intracellular flow cytometric analysis of 2% paraformaldehyde-fixed HeLa (Human epithelial cells from cervix adenocarcinoma) cells treated with 500 ng/ml Trichostatin A for 4 hours labeling alpha Tubulin (acetyl K40) with ab179484 at 1/240 dilution (red line). Goat anti rabbit IgG (FITC) at 1/150 dilution was used as the secondary antibody. ab179484 preincubated with 1mg/ml acetyl Alpha tubulin (acetyl K40) peptide (green) or non-acetyl Alpha tubulin (acetyl K40) peptide (orange). The isotype control was Rabbit monoclonal IgG (black) and the unlabelled contol was cells without incubation with primary antibody and secondary antibody (blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179484).



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] - BSA and Azide free (ab209348)

Alpha Tubulin (acetyl K40) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

ab179484 stained in Hela cells. Untreated and Trichostatin A treated (50ug/ml, 4 hours) cells were fixed with 4% paraformaldehyde (10min) at room temperature and incubated with PBS containing 10% goat serum, 0.3 M glycine, 1% BSA and 0.1% triton for 1h at room temperature to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody ab179484 at 1/500 dilution overnight at +4°C. The secondary antibody was ab150177 used at 1 ug/ml for 1hour at room temperature (colored green). DAPI was used to stain the cell nuclei (colored blue) at a concentration of 1.43µM for 1hour at room temperature.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179484).



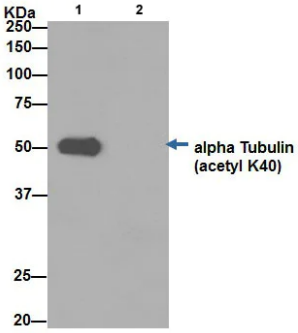
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] - BSA and Azide free (ab209348)

Alpha Tubulin (acetyl K40) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

Immunohistochemical analysis of paraffin-embedded Human cerebral cortex tissue labeling alpha Tubulin (acetyl K40) with ab179484 at 1/1000 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Cytoplasmic staining is observed on neuron cells of Human brain tissue. Counter stained with Hematoxylin.
Negative control: Using PBS instead of primary ab, secondary ab is prediluted HRP Polymer for Rabbit/Mouse IgG.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179484).

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



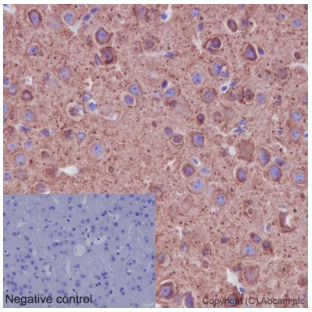
Immunoprecipitation - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] - BSA and Azide free (ab209348)

Alpha Tubulin was immunoprecipitated from 1mg of HeLa cells (Human epithelial cells from cervix adenocarcinoma) treated with 500 ng/ml Trichostatin A for 4 hours with ab179484 at 1/70 dilution. Western blot was performed from 10 µg of the immunoprecipitate using ab179484 at 1/1000 dilution. Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG, was used as secondary antibody at 1/1500 dilution. Left lane: Hela whole cell extract. Right lane: PBS instead of Hela whole cell extract.
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179484).

All lanes:
Immunoprecipitation - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

Predicted band size: 50 kDa



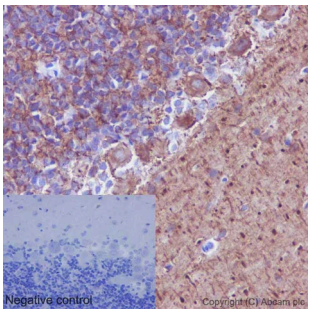
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] - BSA and Azide free (ab209348)

Alpha Tubulin (acetyl K40) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

Immunohistochemical analysis of paraffin-embedded Mouse cerebral cortex tissue labeling alpha Tubulin (acetyl K40) with ab179484 at 1/1000 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Cytoplasmic staining is observed on neuron cells of Mouse cerebral cortex tissue. Counter stained with Hematoxylin.
Negative control: Using PBS instead of primary ab, secondary ab is prediluted HRP Polymer for Rabbit/Mouse IgG.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179484).

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



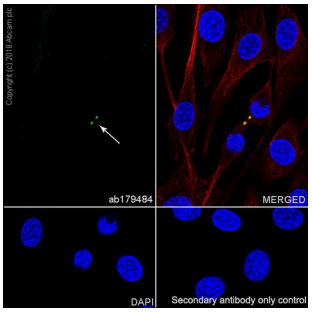
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] - BSA and Azide free (ab209348)

Alpha Tubulin (acetyl K40) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

This IHC data was generated using the same anti-alpha Tubulin (acetyl K40) antibody clone, EPR16772, in a different buffer formulation (cat# ab179484).
Immunohistochemical analysis of paraffin-embedded Rat cerebellum tissue labeling alpha Tubulin (acetyl K40) with ab179484 at 1/1000 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Cytoplasmic staining is observed on Purkinje cells of cerebellum. Counter stained with Hematoxylin.

Negative control: Using PBS instead of primary ab, secondary ab is prediluted HRP Polymer for Rabbit/Mouse IgG.

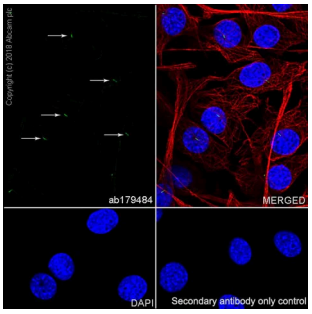
Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] - BSA and Azide free (ab209348)

Alpha Tubulin (acetyl K40) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

ab179484 staining alpha Tubulin in NIH/3T3 (mouse embryonic fibroblast) cell line by ICC/IF (Immunocytochemistry/Immunofluorescence). The cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% TritonX-100. Samples were incubated with primary antibody at 1:20000 dilution. An AlexaFluor® 488 Goat anti-Rabbit (ab150077) was used as a secondary antibody at 1:1000 dilution. An Anti-Alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594), ab195889 was used as a counterstain at 1:200 dilution. DAPI was used as a nuclear counterstain. Confocal image showing midbody (arrows) staining in NIH/3T3 cells treated with starvation for 48 hours.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179484).



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] - BSA and Azide free (ab209348)

Alpha Tubulin (acetyl K40) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

This ICC/IF data was generated using the same anti-alpha Tubulin (acetyl K40) antibody clone, EPR16772, in a different buffer formulation (cat# ab179484).
ab179484 staining alpha Tubulin in NIH/3T3 (mouse embryonic fibroblast) cell line by ICC/IF (Immunocytochemistry/Immunofluorescence).The cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% TritonX-100. Samples were incubated with primary antibody at 1:20000

dilution. An AlexaFluor®488 Goat anti-Rabbit (ab150077) was used as a secondary antibody at 1:1000 dilution. An Anti-Alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594), ab195889 was used as a counterstain at 1:200 dilution. DAPI was used as a nuclear counterstain. Confocal image showing cilia (arrows) staining in NIH/3T3 cells treated with starvation for 48 hours.

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