abcam

ab289863

Anti-alpha Tubulin acetyl K40 antibody [EPR16772] - Rat IgG2a (Chimeric)

Lab Essentials | Recombinant | 20ul selling size

Key facts

Isotype	IgG2a
Host species	Rat
Storage buffer	pH: 7.2 - 7.4 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	EPR16772
Purification technique	Ion exchange chromatography
Concentration	0.974 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Species	Mouse
Dilution info	1/100
Notes	-

Species	Rat
Dilution info	1/100
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/1000
Notes	-

Expected

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

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	-

Species	Rat
Dilution info	1/100
Notes	-

Species	Mouse
Dilution info	1/100

Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
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 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

This rat monoclonal chimeric antibody has been engineered from a RabMAb parent antibody (ab179484). By necessity, some rabbit sequence is retained as part of the variable domain. When multiplexing with other rabbit-derived antibodies, using cross absorbed FC-reactive secondary antibodies are recommended.
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	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

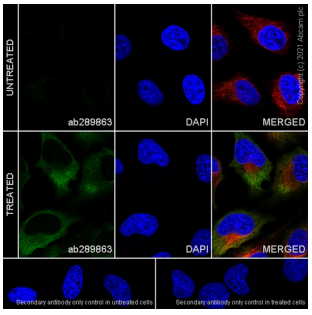
We do not recommend this combination. It is not covered by our product promise.

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.

8 product images



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin acetyl K40 antibody [EPR16772] - Rat IgG2a (Chimeric) (ab289863)

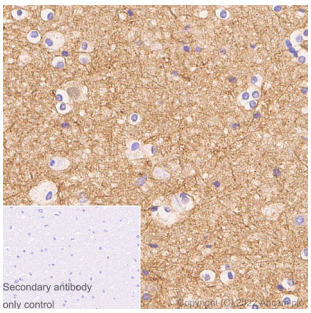
Alpha Tubulin acetyl K40 Immunocytochemistry/ Immunofluorescence staining of HeLa cells using rat Anti-alpha Tubulin acetyl K40 antibody

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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Tubulin acetyl K40 antibody [EPR16772] - Rat IgG2a (Chimeric) (ab289863)

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

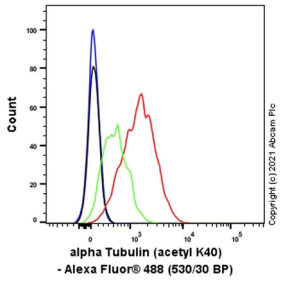
Immunohistochemical analysis of paraffin-embedded human cerebrum tissue labeling alpha Tubulin (acetyl K40) with ab289863 at 1/100 followed by a ready to use LeicaDS9800 (BOND™ Polymer Refine Detection kit).

Positive staining on human cerebrum.

The section was incubated with ab289863 for 30 mins at room temperature and followed by specific rat IgG antibody (ab102248) for 8 mins, immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with Hematoxylin.

Secondary antibody only control: PBS was used instead of primary antibody followed by a ready to use secondary antibody LeicaDS9800 (BOND™ Polymer Refine Detection).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.

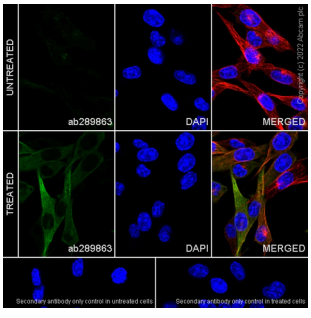


Flow Cytometry (Intracellular) - Anti-alpha Tubulin acetyl K40 antibody [EPR16772] - Rat IgG2a (Chimeric) (ab289863)

Alpha Tubulin acetyl K40 Flow Cytometry (Intracellular) staining of HeLa (Human epithelial cells from cervix adenocarcinoma) treated with 500 ng/ml Trichostatin A for 4 hours (Red) using rat Anti-alpha Tubulin acetyl K40 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized HeLa (Human epithelial cells from cervix adenocarcinoma) treated with 500 ng/ml Trichostatin A for 4 hours (Red) / Untreated control (Green) cells labeling alpha Tubulin (acetyl K40) with ab289863 at 1/1000 dilution (Red) compared with a Rat monoclonal IgG (Black) isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue).

A Goat Anti-Rat IgG Fc (DyLight 488, ab96971) at 1/2000 dilution was used as the secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin acetyl K40 antibody [EPR16772] - Rat IgG2a (Chimeric) (ab289863)

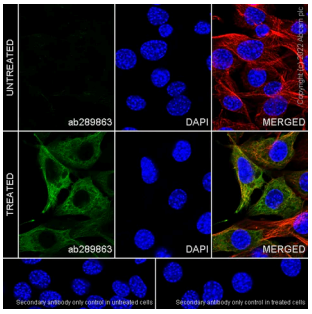
Alpha Tubulin acetyl K40 Immunocytochemistry/ Immunofluorescence staining of C6 cells using rat Anti-alpha Tubulin acetyl K40 antibody

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.



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin acetyl K40 antibody [EPR16772] - Rat IgG2a (Chimeric) (ab289863)

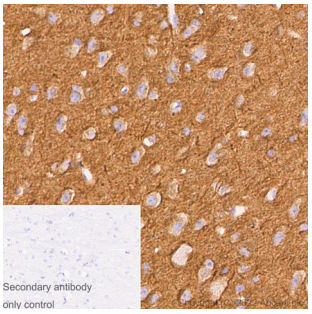
Alpha Tubulin acetyl K40 Immunocytochemistry/ Immunofluorescence staining of NIH/3T3 cells using rat Anti-alpha Tubulin acetyl K40 antibody

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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Tubulin acetyl K40 antibody [EPR16772] - Rat IgG2a (Chimeric) (ab289863)

Alpha Tubulin acetyl K40 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse cerebrum tissue using rat Anti-alpha Tubulin acetyl K40 antibody

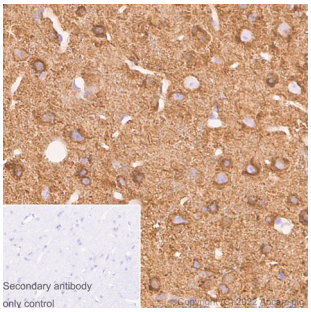
Immunohistochemical analysis of paraffin-embedded mouse cerebrum tissue labeling alpha Tubulin (acetyl K40) with ab289863 at 1/500 followed by a ready to use LeicaDS9800 (BOND™ Polymer Refine Detection kit).

Positive staining on mouse cerebrum.

The section was incubated with ab289863 for 30 mins at room temperature and followed by specific rat IgG antibody (ab102248) for 8 mins, immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with Hematoxylin.

Secondary antibody only control: PBS was used instead of primary antibody followed by a ready to use secondary antibody LeicaDS9800 (BOND™ Polymer Refine Detection).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Tubulin acetyl K40 antibody [EPR16772] - Rat IgG2a (Chimeric) (ab289863)

Alpha Tubulin acetyl K40 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat cerebrum tissue using rat Anti-alpha Tubulin acetyl K40 antibody

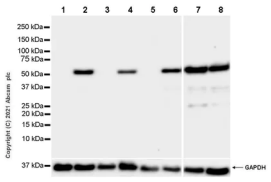
Immunohistochemical analysis of paraffin-embedded rat cerebrum tissue labeling alpha Tubulin (acetyl K40) with ab289863 at 1/500 followed by a ready to use LeicaDS9800 (BOND™ Polymer Refine Detection kit).

Positive staining on rat cerebrum.

The section was incubated with ab289863 for 30 mins at room temperature and followed by specific rat IgG antibody (ab102248) for 8 minutes, immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with Hematoxylin.

Secondary antibody only control: PBS was used instead of primary antibody followed by a ready to use secondary antibody LeicaDS9800 (BOND™ Polymer Refine Detection).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.



Western blot - Anti-alpha Tubulin acetyl K40 antibody [EPR16772] - Rat IgG2a (Chimeric) (ab289863)

Alpha Tubulin acetyl K40 Western blot staining using rat Anti-alpha Tubulin acetyl K40 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Exposure time: Lane 1-6: 3.25 seconds Lane 7-8: 5.5 seconds

All lanes:
Western blot - Anti-alpha Tubulin acetyl K40 antibody [EPR16772] - Rat IgG2a (Chimeric) (ab289863) at 1/1000 dilution

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

Lane 2:
HeLa treated with 500 ng/ml Trichostatin A for 4 hours, whole cell lysate at 20 µg

Lane 3:
Untreated NIH/3T3 (Mouse embyro fibroblast cells), whole cell lysate at 20 µg

Lane 4:
NIH/3T3 treated with 500 ng/ml Trichostatin A for 4 hours, whole cell lysate at 20 µg

Lane 5:
Untreated C6 (Rat glial tumor cells), whole cell lysate at 20 µg

Lane 6:
C6 treated with 500 ng/ml Trichostatin A for 4 hours, whole cell lysate at 20 µg

Lane 7:
Mouse brain tissue lysate at 20 µg

Lane 8:
Rat brain tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rat IgG H&L (HRP) (ab205720) at 1/5000 dilution

Observed band size: 50 kDa

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