abcam

ab7750

Anti-alpha Tubulin antibody [TU-01] - Loading Control

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.097% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Clone number	TU-01
Purification technique	Proprietary technique
Epitope	aa 65-97 on N-terminal structural domain
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from TCS. Purified by precipitation and chromatography. Purity >95% by SDS-PAGE.

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	2 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	Nicotiana benthamiana, Turkey, Pig, Saccharomyces cerevisiae, Paramecium tetraurelia
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Predicted

Species	Nicotiana benthamiana, Turkey, Pig, Saccharomyces cerevisiae, Paramecium tetraurelia
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1-2 µg/mL

Notes	reducing conditions.

Expected

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

Predicted

Species	Nicotiana benthamiana, Turkey, Pig, Saccharomyces cerevisiae, Paramecium tetraurelia
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1-4 µg/mL
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

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

Predicted

Species	Nicotiana benthamiana, Turkey, Pig, Saccharomyces cerevisiae, Paramecium tetraurelia
Dilution info	-
Notes	-

Target data

See full target information TUBA4A

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
Aliquoting information	Upon delivery aliquot
Storage information	Do Not Freeze

Notes

This product was changed from ascites to tissue culture supernatant on 24th January 2018. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

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

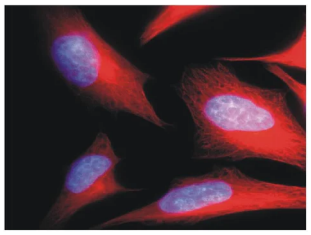
We do not recommend this combination. It is not covered by our product promise.

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.

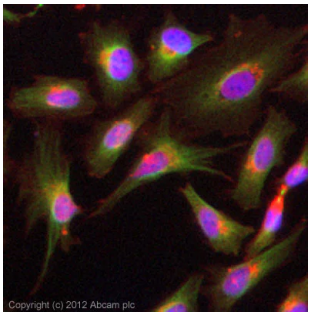
7 product images



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin antibody [TU-01] - Loading Control (ab7750)

Alpha Tubulin Immunocytochemistry/ Immunofluorescence staining using mouse Anti-alpha Tubulin antibody

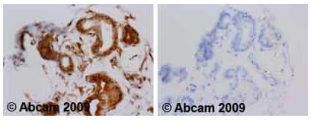
Immunocytochemistry analysis of HeLa (human cervix carcinoma) cells labelling alpha tubulin (red) with ab7750. DAPI was used to stain the nuclei blue.



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin antibody [TU-01] - Loading Control (ab7750)

Alpha Tubulin Immunocytochemistry/ Immunofluorescence staining using mouse Anti-alpha Tubulin antibody

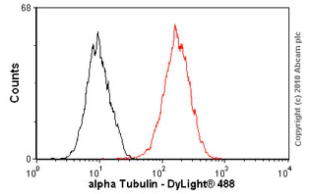
ICC/IF image of ab7750 stained HeLa cells. The cells were 4% formaldehyde fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab7750, 5µg/ml) overnight at +4°C. The secondary antibody (green) was anti-mouse DyLight® 488 (ab96879) used at a 1/250 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Tubulin antibody [TU-01] - Loading Control (ab7750)

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

ab7750 staining human normal skin. Staining is localised to the cytoplasm.
Left panel: with primary antibody at 2 ug/ml. Right panel: isotype control.
Sections were stained using an automated system at room temperature. Sections were rehydrated and antigen retrieved with a retrieval buffer EDTA pH 9.0 . Slides were peroxidase blocked in 3% H_2O_2 in methanol for 10 minutes. They were then blocked for 10 minutes (containing casein 0.25% in PBS) then incubated with primary antibody for 20 minutes and detected with an amplification kit for 30 minutes. Colorimetric detection was completed with diaminobenzidine for 5 minutes. Slides were counterstained with Haematoxylin. Please note that for manual staining we recommend to optimize the primary antibody concentration and incubation time (overnight incubation), and amplification may be required.

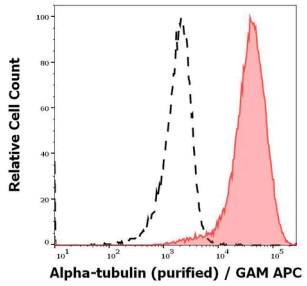


Flow Cytometry (Intracellular) - Anti-alpha Tubulin antibody [TU-01] - Loading Control (ab7750)

Alpha Tubulin Flow Cytometry (Intracellular) staining using mouse Anti-alpha Tubulin antibody

Overlay histogram showing HEK293 cells stained with ab7750 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Triton for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab7750, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was anti-mouse DyLight® 488 (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a

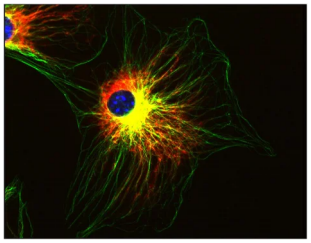
positive signal in HEK293 cells fixed with methanol (5 min)/permeabilized in 0.1% PBS-Triton used under the same conditions.



Flow Cytometry (Intracellular) - Anti-alpha Tubulin antibody [TU-01] - Loading Control (ab7750)

Alpha Tubulin Flow Cytometry (Intracellular) staining using mouse Anti-alpha Tubulin antibody

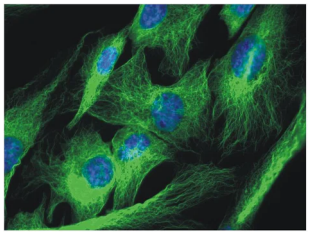
Separation of HeLa cells stained using ab7750 (concentration in sample 3 µg/ml, GAM APC, red-filled) from HeLa cells unstained by primary antibody (GAM APC, black-dashed) in flow cytometry analysis (intracellular staining).



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin antibody [TU-01] - Loading Control (ab7750)

Alpha Tubulin Immunocytochemistry/ Immunofluorescence staining using mouse Anti-alpha Tubulin antibody

Immunocytochemistry/ Immunofluorescence analysis of NIH 3T3 (mouse embryonal fibroblast) cells labelling alpha tubulin (green) with ab7750. Vimentin was stained red as counterstain. DAPI was used to stain the nuclei blue.



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin antibody [TU-01] - Loading Control (ab7750)

Alpha Tubulin Immunocytochemistry/ Immunofluorescence staining using mouse Anti-alpha Tubulin antibody

Immunocytochemistry analysis of NIH 3T3 (mouse embryonal fibroblast) cells labelling alpha tubulin (green) with ab7750. DAPI was used to stain the nuclei blue.

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