abcam

ab6161

Anti-Tubulin antibody [YOL1/34] - Loading Control

Anti-Tubulin antibody [YOL1/34] - Microtubule Marker (ab6161) is a rat monoclonal antibody detecting Tubulin in **Western Blot, Flow Cytometry (Intra), ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Over 150 publications
- Trusted since 2002

Lab Essentials

Key facts

Isotype	IgG2a
Host species	Rat
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 6.97% L-Arginine
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	YOL1/34
Purification technique	Affinity purification Protein G
Epitope	ab6161 binds to an epitope between amino acids 414 and 422 of alpha tubulin.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Rat
Dilution info	5 µg/mL
Notes	-

Species	Mouse
Dilution info	5 µg/mL
Notes	-

Species	Human
Dilution info	5 µg/mL
Notes	-

Predicted

Species	Dog, Saccharomyces cerevisiae, Plants, Schizosaccharomyces pombe, Mammals, Alligator
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1 µg for 10^6 Cells
Notes	ab18450 - Rat monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Expected

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

Predicted

Species	Dog, Saccharomyces cerevisiae, Plants, Schizosaccharomyces pombe, Mammals, Alligator
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1 µg/mL
Notes	-

Species	Rat
Dilution info	1 µg/mL
Notes	-

Species	Human
Dilution info	1 µg/mL
Notes	-

Predicted

Species	Dog, Saccharomyces cerevisiae, Plants, Schizosaccharomyces pombe, Mammals, Alligator
Dilution info	-
Notes	-

Target data

See full target information TUBA1B

Function	Tubulin is the major constituent of microtubules, protein filaments consisting of alpha- and beta-tubulin heterodimers (PubMed:38305685, PubMed:34996871, PubMed:38609661). Microtubules grow by the addition of GTP-tubulin dimers to the microtubule end, where a stabilizing cap forms (PubMed:38305685, PubMed:34996871, PubMed:38609661). Below the cap, tubulin dimers are in GDP-bound state, owing to GTPase activity of alpha-tubulin (PubMed:34996871, PubMed:38609661).

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

What is this antibody validated in?
Anti-Tubulin antibody [YOL1/34] - Microtubule Marker (ab6161) is a rat monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

Trusted by the scientific community
Anti-Tubulin [YOL1/34] - Microtubule Marker (ab6161) was first used in a scientific publication in 2002 and has been cited over 150 times in peer-reviewed journals.

Reviewed by scientists
Anti-Tubulin [YOL1/34] - Microtubule Marker (ab6161) has over 20 independent reviews from customers.

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

Supplementary info

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

Activity summary	Tubulin sometimes called DM1B is a globular protein essential for the formation of microtubules. It has a molecular mass of approximately 55 kDa. Tubulin is expressed in most eukaryotic cells and exists as two closely related subunits alpha-tubulin and beta-tubulin. These subunits polymerize to form linear microtubule structures. Anti-tubulin antibodies such as anti-tubulin Alexa 34 can detect these microtubule markers in cells allowing researchers to visualize cytoskeletal organization.

Biological function summary	This core component of microtubule assembly is important for maintaining cell shape enabling intracellular transport and segregating chromosomes during cell division. As part of a complex tubulin interacts with various microtubule-associated proteins (MAPs) that regulate its dynamic assembly and disassembly. This regulation is important for processes like axonal transport in neurons and the movement of cilia and flagella in other cell types.
Pathways	Tubulin plays a significant role in the mitotic spindle assembly part of the cell cycle. This process is vital for the accurate segregation of chromosomes to daughter cells. Tubulin interacts with the kinesin and dynein motor proteins within this pathway which are essential for intracellular transport and mitosis. Another key pathway involving tubulin is the intracellular trafficking facilitated by motor proteins which is necessary for maintaining cell homeostasis and function.
Associated diseases and disorders	Aberrant regulation or mutations in tubulin can lead to conditions such as cancer and neurodegenerative diseases. In cancer altered tubulin dynamics contribute to uncontrolled cell proliferation. Neurodegenerative disorders such as Alzheimer's disease show involvement with tubulin through abnormal microtubule stability often linked to the MAP tau protein. Anti-tubulin antibodies including LAMP1 can help in research related to these conditions by offering methods to study tubulin distribution and function in diseased cells.

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

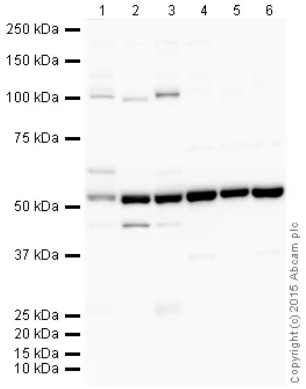
We do not recommend this combination. It is not covered by our product promise.

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.

10 product images



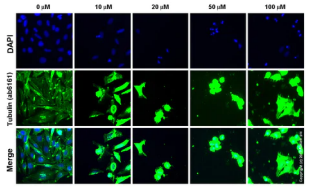
Western blot - Anti-Tubulin antibody [YOL1/34] - Loading Control (ab6161)

Tubulin Western blot staining using rat Anti-Tubulin antibody

This blot was produced using a 4-12% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for 50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 2% Bovine Serum Albumin before being incubated with ab6161 overnight at 4°C. Antibody binding was detected using ab205720, and visualised using ECL development solution ab133406.
Developed using the ECL technique.

Performed under reducing conditions.

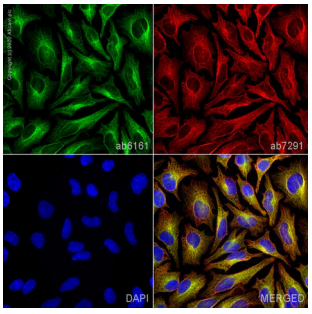
Exposure time: 15s



Immunocytochemistry/ Immunofluorescence - Anti-Tubulin antibody [YOL1/34] - Loading Control (ab6161)

Tubulin Immunocytochemistry/ Immunofluorescence staining using rat Anti-Tubulin antibody

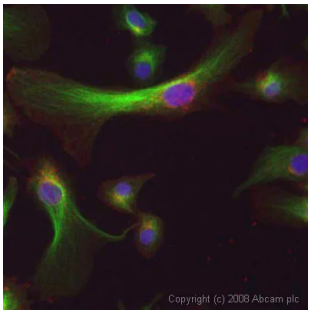
ab6161 staining tubulin HeLa cells treated with anisomycin (ab120495), by ICC/IF. Increase in tubulin expression correlates with increased concentration of anisomycin as described in literature.
The cells were incubated at 37°C for 6h in media containing different concentrations of ab120495 (anisomycin) in DMSO, fixed with 4% formaldehyde for 10 minutes at room temperature and blocked with PBS containing 10% goat serum, 0.3 M glycine, 1% BSA and 0.1% tween for 2h at room temperature. Staining of the treated cells with ab6161 (5 µg/ml) was performed overnight at 4°C in PBS containing 1% BSA and 0.1% tween. A DyLight 488 goat anti-rat polyclonal antibody (ab98386) at 1/250 dilution was used as the secondary antibody. Nuclei were counterstained with DAPI and are shown in blue.



Immunocytochemistry/ Immunofluorescence - Anti-Tubulin antibody [YOL1/34] - Loading Control (ab6161)

Tubulin Immunocytochemistry/ Immunofluorescence staining using rat Anti-Tubulin antibody

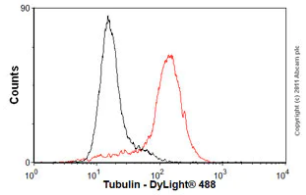
ab6161 staining Tubulin in HeLa cells. The cells were fixed with 4% paraformaldehyde (10 min), permeabilized with 0.1% PBS-Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated overnight at 4°C with ab6161 at 5µg/ml and ab7291, Mouse monoclonal [DM1A] to alpha Tubulin - Loading Control. Cells were then incubated with ab150165, Goat polyclonal Secondary Antibody to Rat IgG - H&L (Alexa Fluor® 488), pre-adsorbed at 1/1000 dilution (shown in green) and ab150120, Goat polyclonal Secondary Antibody to Mouse IgG - H&L (Alexa Fluor® 594), pre-adsorbed at 1/1000 dilution (shown in pseudocolour red). Nuclear DNA was labelled with DAPI (shown in blue).
Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a maximum intensity projection of confocal sections is shown.



Immunocytochemistry/ Immunofluorescence - Anti-Tubulin antibody [YOL1/34] - Loading Control (ab6161)

Tubulin Immunocytochemistry/ Immunofluorescence staining using rat Anti-Tubulin antibody

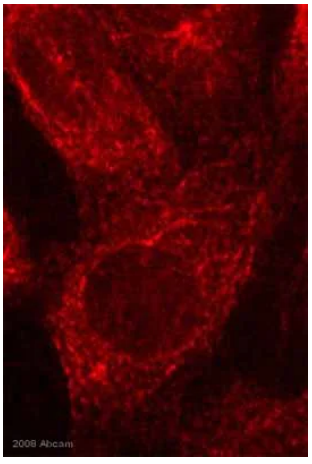
ICC/IF image of ab6161 stained human HepG2 cells. The cells were 4% PFA fixed (10 min), permabilised in 0.1% PBS-Tween (20 min) and incubated with the antibody (ab6161, 1µg/ml) for 1h at room temperature. 1%BSA / 10% normal goat serum / 0.3M glycine was used to block non-specific protein-protein interactions. The secondary antibody (green) was Alexa Fluor® 488 goat anti-rat IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red). DAPI was used to stain the cell nuclei (blue). This antibody also gave a positive IF result in HeLa, HEK 293 and MCF7 cells.



Flow Cytometry (Intracellular) - Anti-Tubulin antibody [YOL1/34] - Loading Control (ab6161)

Tubulin Flow Cytometry (Intracellular) staining using rat Anti-Tubulin antibody

Overlay histogram showing HeLa cells stained with ab6161 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween 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 (ab6161, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rat IgG (H+L) (ab98386) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rat IgG2a [aRTK2758] (ab18450, 1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.

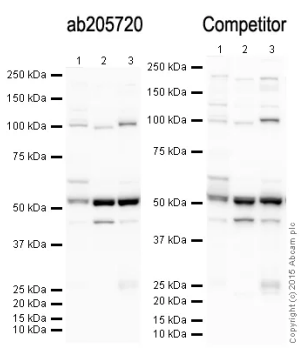


This image is courtesy of an anonymous customer review

Immunocytochemistry/ Immunofluorescence - Anti-Tubulin antibody [YOL1/34] - Loading Control (ab6161)

Tubulin Immunocytochemistry/ Immunofluorescence staining using rat Anti-Tubulin antibody

ab6161 staining mouse NIH 3T3 fibroblast cells by ICC/IF. Cells were PFA fixed and permeabilized in 0.2% Triton X-100 prior to blocking in 5% BSA for 45 minutes at RT. The primary antibody was diluted 1/1000 and incubated with the sample for 1 hour. An Alexa Fluor® 568 conjugated goat anti-rat antibody, diluted 1/3000, was used as the secondary.



Western blot - Anti-Tubulin antibody [YOL1/34] - Loading Control (ab6161)

Tubulin Western blot staining using rat Anti-Tubulin antibody

This blot was produced using a 4-12% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for 50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 2% Bovine Serum Albumin before being incubated with ab6161 overnight at 4°C. Antibody binding was detected using ab205720

(Left Image) and a competitor secondary (Right Image), and visualised using ECL development solution ab133406.
Performed under reducing conditions.

Exposure time: 15s



Western blot - Anti-Tubulin antibody [YOL1/34] - Loading Control (ab6161)

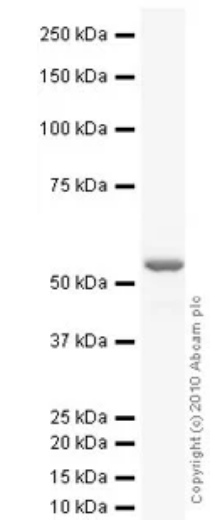
Tubulin Western blot staining using rat Anti-Tubulin antibody

Western blot against tubulin with ab6161 at 1/3000. Secondary Rabbit anti-Rat IgG HRP (ab6734)was used at 1/2000. Exposure time: 2mins.

Lane 1: 20µg/lane HeLa (Human) whole cell lysates (ab7898).

Lane 2: 20µg/lane 3T3 (Mouse) whole cell lysate (ab7901).

Lane 3: 20µg/lane Rat brain tissue lysate (ab7942).



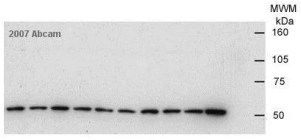
Western blot - Anti-Tubulin antibody [YOL1/34] - Loading Control (ab6161)

Tubulin Western blot staining of Brain (Rat) Tissue Lysate using rat Anti-Tubulin antibody

Developed using the ECL technique.

Performed under reducing conditions.

Exposure time: 3min



This image is courtesy of an anonymous customer review

Western blot - Anti-Tubulin antibody [YOL1/34] - Loading Control (ab6161)

Tubulin Western blot staining of Yeast (Saccharomyces cerevisiae) whole cell extract prepared by bead-beating using rat Anti-Tubulin antibody

Developed using the ECL technique.

Performed under reducing conditions.

Exposure time: 30s

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