abcam

ab6160

Anti-Tubulin antibody [YL1/2] - Loading Control

Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160) is a rat monoclonal antibody detecting Tubulin in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Over 540 publications
- Trusted since 2002

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	YL1/2
Purification technique	Affinity purification Protein G
Epitope	The YL1/2 monoclonal epitope has been mapped to the last 8 residues (GEEEGEEY) at the carboxy terminus of alpha tubulin when tyrosinated (PubMed IDs: 6415068, 6204858).
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

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

Predicted

Species	Pig, Saccharomyces cerevisiae, Xenopus laevis, Caenorhabditis elegans, Drosophila melanogaster, Schizosaccharomyces pombe, Mammals, African green monkey
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/5000 - 1/10000
Notes	-

Species	Rat
Dilution info	1/5000 - 1/10000
Notes	-

Species	Human
Dilution info	1/5000 - 1/10000
Notes	-

Predicted

Species	Pig, Saccharomyces cerevisiae, Xenopus laevis, Caenorhabditis elegans, Drosophila melanogaster, Schizosaccharomyces pombe, Mammals, African green monkey
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Pig, Saccharomyces cerevisiae, Xenopus laevis, Caenorhabditis elegans, Drosophila melanogaster, Schizosaccharomyces pombe, Mammals, African green monkey
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/1000
Notes	(see PMID: 16230461)

Expected

Species	Mouse, Rat

Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Pig, Saccharomyces cerevisiae, Xenopus laevis, Caenorhabditis elegans, Drosophila melanogaster, Schizosaccharomyces pombe, Mammals, African green monkey
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

Product Specifications

Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160) is a rat monoclonal antibody and is validated for use in Flow

Cyt (Intra), ICC/IF, IHC-P, WB in human, mouse, rat samples.
Tubulin antibodies are often used as loading controls in Western Blot. Anti-Tubulin antibody [YL1/2] - Loading Control has been verified in Western Blot samples and detects a band at 50kDa Molecular weight.
Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160) specifically detects Tubulin (UniProt ID: P68363; Molecular weight: 50kDa) and is sold in 100 µg selling sizes.

Quality and Validation
Abcam's high quality validation processes ensure Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160) has high sensitivity and specificity.
Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160) has been cited over 545 times in peer reviewed journals and is trusted by the scientific community.
Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160) has 36 independent reviews from customers.

Related Products
Conjugation-ready, carrier free format available for antibody clone YL1/2 - ab269872.
Antibody clone YL1/2 is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 488, HRP (ab197737, ab197740).

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

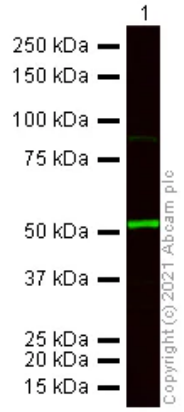
We do not recommend this combination. It is not covered by our product promise.

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.

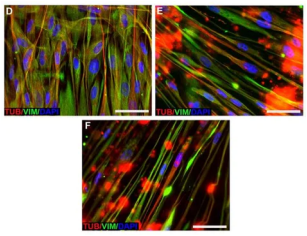
16 product images



Western blot - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

Tubulin Western blot staining of HeLa Whole Cell Lysate 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 5% Milk before being incubated with ab6160 overnight at 4°C. Antibody binding was detected using ab175786 at a 1:10,000 dilution for 1hr at room temperature and then imaged using the Licor Odyssey CLx.



Loison-Robert et al PLoS One. 2018 Jan 25;13(1):e0190014. doi: 10.1371/journal.pone.0190014. eCollection 2018. Fig 5. Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/

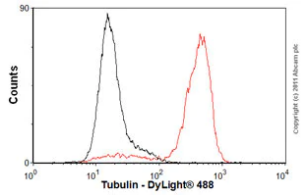
Immunocytochemistry/ Immunofluorescence - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

Tubulin Immunocytochemistry/ Immunofluorescence staining using rat Anti-Tubulin antibody

Cytoskeleton and major extracellular matrix proteins in human DPSC (Dental pulp stem cell) were analyzed by immunofluorescence.
Vimentin and tubulin (Panel D, control, E, (BD) and F, (BR)) are shown.

After 7 days in contact with/without the materials (Biodentine (BD) and Bioroot (BR)), coated coverslip cultures were fixed in PBS (pH 7.4) containing 4% paraformaldehyde/5% sucrose for 10 minutes. For detection of intracellular molecules, the cells on the coverslips were permeabilized using 0.5% Triton X-100. To block background staining, cells were treated with PBS containing 1% BSA/1% glycine at 37°C for 20 minutes. Samples were incubated with the primary antibody at 4°C overnight or at 37°C for 2 hours. For double immunostaining, primary antibodies were incubated as above. Samples were then incubated with the appropriate secondary antibodies at 37°C for 1 hour. Cell nuclei were stained using DAPI.

Scale Bar: 100 µm.

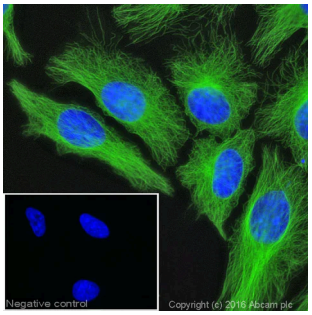


Flow Cytometry (Intracellular) - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

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

Overlay histogram showing HeLa (Human epithelial cell line from cervix adenocarcinoma) cells stained with ab6160 (red line).
The cells were fixed with 80% methanol (5 minutes) and then permeabilized with 0.1% PBS-Tween for 20 minutes. 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 (ab6160, 1 µg/1x10^6 cells) for 30 minutes at 22°C. The secondary antibody used was DyLight® 488 goat anti-rat IgG (H+L) (ab98386) at 1/500 dilution for 30 minutes at 22°C. Isotype control antibody (black line) was rat IgG2a [aRTK2758] (ab18450, 1 µg/1x10^6 cells) used under the same conditions.

Acquisition of >5,000 events was performed.



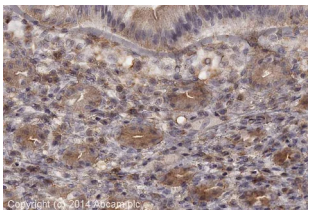
Immunocytochemistry/ Immunofluorescence - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

Tubulin Immunocytochemistry/ Immunofluorescence staining using rat Anti-Tubulin antibody

ICC/IF image of ab6160 stained HeLa (Human epithelial cell line from cervix adenocarcinoma) cells.
The cells were fixed in 100% methanol 5 minutes, permeabilized with 0.1% Triton X-100 for 5 minutes and then incubated in 1% BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1 hour to block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab6160, 1/1000 dilution) overnight at +4°C. The secondary antibody (green) was ab150165 Alexa Fluor® 488 goat anti-rat IgG (H+L) pre-adsorbed, used at a 1/1000 dilution for 1 hour. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

The negative control (inset) is a secondary-only assay to demonstrate low non-specific binding of the secondary antibody.

This product also gave a positive signal under the same testing conditions in HeLa cells fixed with 4% formaldehyde (10 minutes).



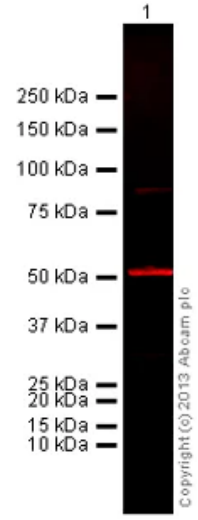
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

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

IHC image of Tubulin staining in human colon formalin fixed paraffin embedded tissue section*, performed on a Leica Bond™ system using the standard protocol F.
The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer pH 6 for 20 minutes. The section was then incubated with ab6160, 5 µg/ml, for 15 minutes at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

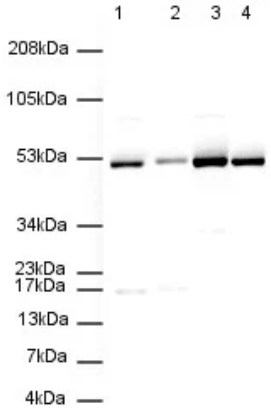
*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre



Western blot - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

Tubulin Western blot staining of HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate using rat Anti-Tubulin antibody

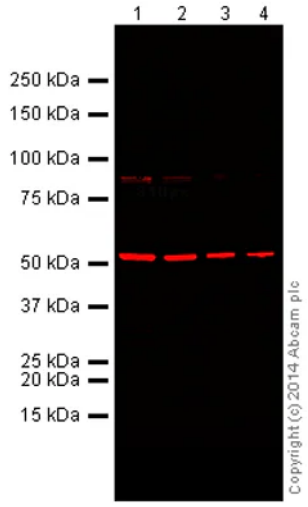
This blot was produced using a 4-12% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for 50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 5% Milk before being incubated with ab6160 overnight at 4°C. Antibody binding was detected using ab175778 at a 1:10,000 dilution for 1hr at room temperature and then imaged using the Licor Odyssey CLx.



Western blot - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

Tubulin Western blot staining using rat Anti-Tubulin antibody

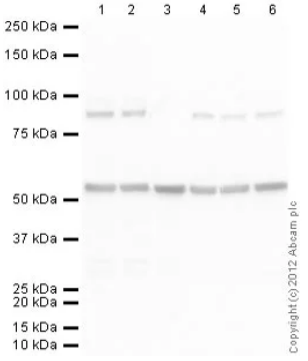
Exposure time: 10s



Western blot - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

Tubulin Western blot staining using rat Anti-Tubulin antibody

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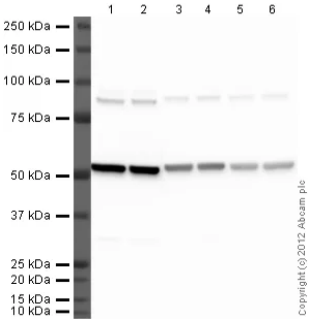


Western blot - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

Tubulin Western blot staining of HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate using rat Anti-Tubulin antibody

Developed using the ECL technique.

Performed under reducing conditions.



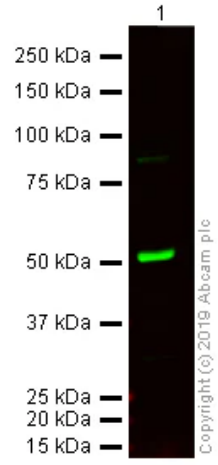
Western blot - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

Tubulin Western blot staining of HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate using rat Anti-Tubulin antibody

Additional bands at : 85 kDa. We are unsure as to the identity of these extra bands.

Developed using the ECL technique.

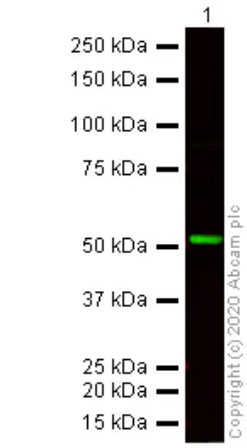
Performed under reducing conditions.



Western blot - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

Tubulin Western blot staining of HeLa Whole Cell Lysate using rat Anti-Tubulin antibody

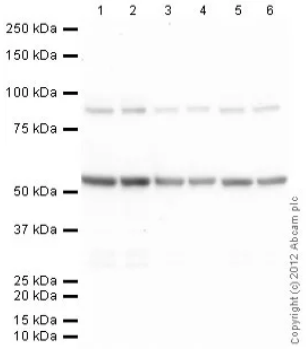
This blot was produced using a 4-12% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for 50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 5% milk blocking buffer before being incubated with ab6160 overnight at 4°C. Antibody binding was detected using ab175750 at a 1:10,000 dilution for 1hr at room temperature and then imaged using the Licor Odyssey CLx. Performed under reducing conditions.



Western blot - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

Tubulin Western blot staining of HeLa Whole Cell Lysate using rat Anti-Tubulin antibody

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Performed under reducing conditions.

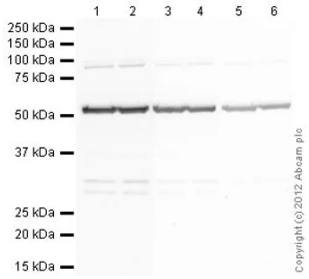


Western blot - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

Tubulin Western blot staining of HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate using rat Anti-Tubulin antibody

Developed using the ECL technique.

Performed under reducing conditions.

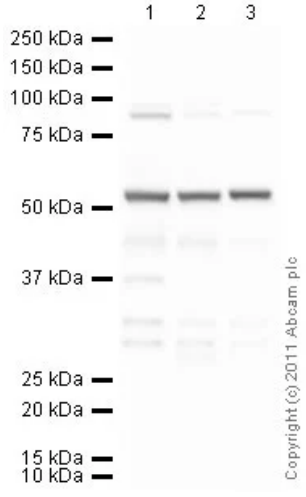


Western blot - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

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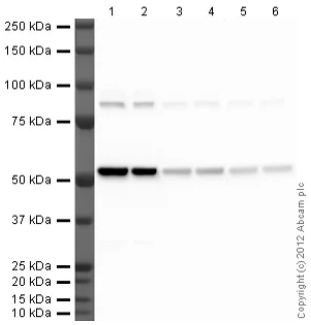


Western blot - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

Tubulin Western blot staining using rat Anti-Tubulin antibody

Performed under reducing conditions.

Exposure time: 8min



Western blot - Anti-Tubulin antibody [YL1/2] - Loading Control (ab6160)

Tubulin Western blot staining of HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate using rat Anti-Tubulin antibody

Developed using the ECL technique.

Performed under reducing conditions.

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