


## Product datasheet

### Anti-beta Tubulin antibody [AA2] ab231082

★★★★★ [1 Abreviews](#) [1 References](#) [3 Images](#)

#### Overview

<b>Product name</b>	Anti-beta Tubulin antibody [AA2]
<b>Description</b>	Mouse monoclonal [AA2] to beta Tubulin
<b>Host species</b>	Mouse
<b>Tested applications</b>	<b>Suitable for:</b> WB, ICC/IF, IHC-P
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human <b>Predicted to work with:</b> Plants, Mammals 
<b>Immunogen</b>	Full length native protein (purified). This information is proprietary to Abcam and/or its suppliers.
<b>Epitope</b>	Recognizes amino acids 416-431
<b>Positive control</b>	ICC/IF: A431 cells. IHC-P: FFPE human colon carcinoma tissue sections. WB: HeLa, NIH3T3, PC12
<b>General notes</b>	<p>This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact <a href="mailto:orders@abcam.com">orders@abcam.com</a>.</p> <p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&amp;As</p>

#### Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
<b>Storage buffer</b>	Preservative: 0.02% Sodium azide Constituent: PBS
<b>Purity</b>	Protein G purified
<b>Clonality</b>	Monoclonal
<b>Clone number</b>	AA2

<b>Isotype</b>	IgG1
<b>Light chain type</b>	kappa

## Applications

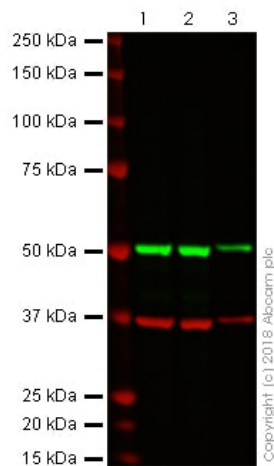
**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab231082 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
<b>WB</b>		Use a concentration of 1 µg/ml. Predicted molecular weight: 49 kDa.
<b>ICC/IF</b>	★★★★★ (1)	Use a concentration of 1 µg/ml. This antibody gives a positive signal in both 100% MeOH and 4% PFA-fixed cells.
<b>IHC-P</b>		Use a concentration of 1 µg/ml. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

## Target

<b>Function</b>	Tubulin is the major constituent of microtubules. It binds two moles of GTP, one at an exchangeable site on the beta chain and one at a non-exchangeable site on the alpha chain.
<b>Tissue specificity</b>	Ubiquitously expressed with highest levels in spleen, thymus and immature brain.
<b>Involvement in disease</b>	Cortical dysplasia, complex, with other brain malformations 6 Skin creases, congenital symmetric circumferential, 1
<b>Sequence similarities</b>	Belongs to the tubulin family.
<b>Domain</b>	The highly acidic C-terminal region may bind cations such as calcium.
<b>Post-translational modifications</b>	<p>Some glutamate residues at the C-terminus are polyglutamylated, resulting in polyglutamate chains on the gamma-carboxyl group (PubMed:26875866). Polyglutamylation plays a key role in microtubule severing by spastin (SPAST). SPAST preferentially recognizes and acts on microtubules decorated with short polyglutamate tails: severing activity by SPAST increases as the number of glutamates per tubulin rises from one to eight, but decreases beyond this glutamylation threshold (PubMed:26875866).</p> <p>Some glutamate residues at the C-terminus are monoglycylated but not polyglycylated due to the absence of functional TTL10 in human. Monoglycylation is mainly limited to tubulin incorporated into axonemes (cilia and flagella). Both polyglutamylation and monoglycylation can coexist on the same protein on adjacent residues, and lowering glycylation levels increases polyglutamylation, and reciprocally. The precise function of monoglycylation is still unclear.</p> <p>Phosphorylated on Ser-172 by CDK1 during the cell cycle, from metaphase to telophase, but not in interphase. This phosphorylation inhibits tubulin incorporation into microtubules.</p>
<b>Cellular localization</b>	Cytoplasm, cytoskeleton.

## Images



Western blot - Anti-beta Tubulin antibody [AA2]  
(ab231082)

**All lanes :**

**Lane 1 :** HeLa whole cell lysate

**Lane 2 :** NIH3T3 whole cell lysate

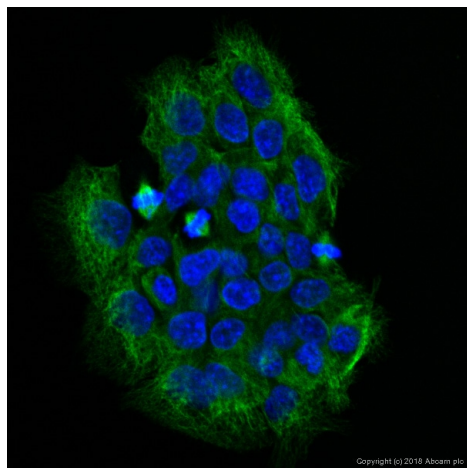
**Lane 3 :** PC12 whole cell lysate

Lysates/proteins at 20 µg per lane.

Performed under non-reducing conditions.

**Predicted band size:** 49 kDa

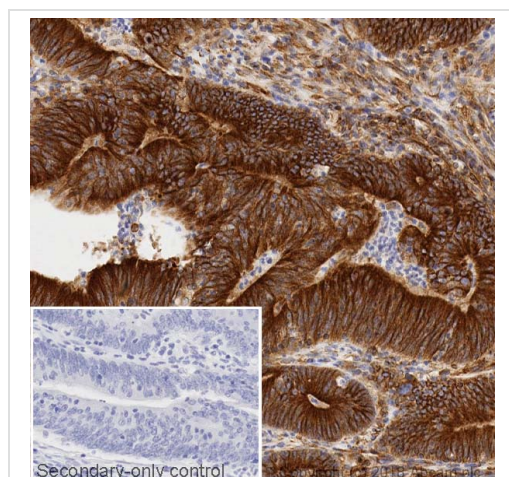
This blot was produced using a 4-12% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for 50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 3% milk before being incubated with ab231082 and **ab9485** (Rabbit anti-GAPDH loading control) overnight at 4°C at 1µg/ml and 1/10000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (**ab216776**) secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.



Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody [AA2] (ab231082)

ab231082 staining beta Tubulin in A431 (human epidermoid carcinoma cell line) cells. The cells were fixed with 100% methanol (5min), permeabilized with 0.1% PBS-Tween 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 ab231082 at 1µg/ml. Cells were then incubated with **ab150117**, Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) at 1/1000 dilution (shown in green). Nuclear DNA was labelled with DAPI (shown in blue).

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Tubulin antibody [AA2] (ab231082)

IHC image of beta tubulin staining in a section of formalin-fixed paraffin-embedded normal human colon carcinoma\* 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 (pH6, epitope retrieval solution 1) for 20mins. The section was then incubated with ab231082, 1ug/ml, for 15 mins 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. The inset secondary-only control image is taken from an identical assay without primary antibody.

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*

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