Product datasheet

Anti-beta Tubulin antibody ab15568

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Overview

Product name  Anti-beta Tubulin antibody
Description  Rabbit polyclonal to beta Tubulin
Host species  Rabbit
Tested applications  Suitable for: Flow Cyt, ICC/IF, IHC-P, IP, WB
Species reactivity  Reacts with: Mouse, Cow, Human, Rice
                    Predicted to work with: Rat, Chicken, Guinea pig, Dog, Pig, Saccharomyces cerevisiae, Xenopus laevis, Chimpanzee, Sea urchin, Fungi, Xenopus tropicalis
Immunogen  Synthetic peptide within Human beta Tubulin aa 400 to the C-terminus. The exact sequence is proprietary.
            Database link: Q13509
Positive control  Recombinant Human beta Tubulin protein (ab70187) can be used as a positive control in WB.
                 MAD109 cells, Skin and lung, HeLa cell line
General notes  This product is FOR RESEARCH USE ONLY. For commercial use, please contact partnerships@abcam.com.

Properties

Form  Liquid
Storage instructions  Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
Storage buffer  pH: 7.6
                 Preservative: 0.1% Sodium azide
                 Constituents: PBS, 1% BSA
Purity  Immunogen affinity purified
Clonality  Polyclonal
Isotype  IgG

Applications

Our Abpromise guarantee covers the use of ab15568 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.
**Function**
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.

**Tissue specificity**
Ubiquitously expressed with highest levels in spleen, thymus and immature brain.

**Involvement in disease**
Cortical dysplasia, complex, with other brain malformations
Skin creases, congenital symmetric circumferential

**Sequence similarities**
Belongs to the tubulin family.

**Domain**
The highly acidic C-terminal region may bind cations such as calcium.

**Post-translational modifications**
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).

Some glutamate residues at the C-terminus are monoglycylated but not polyglycylated due to the absence of functional TTLL10 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.

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.

**Cellular localization**
Cytoplasm, cytoskeleton.

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<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Cyt</td>
<td>Use at an assay dependent concentration. PubMed: 19509307</td>
<td>ab171870 - Rabbit polyclonal IgG, is suitable for use as an isotype control with this antibody.</td>
</tr>
<tr>
<td>ICC/IF</td>
<td>★★★★★★★</td>
<td>Use a concentration of 1 µg/ml.</td>
</tr>
<tr>
<td>IHC-P</td>
<td>★★★★★★★</td>
<td>1/200. Antigen retrieval is not essential but may optimise staining.</td>
</tr>
<tr>
<td>IP</td>
<td>Use at an assay dependent concentration.</td>
<td></td>
</tr>
<tr>
<td>WB</td>
<td>★★★★★★★</td>
<td>Use at an assay dependent concentration. Predicted molecular weight: 55 kDa.</td>
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</tbody>
</table>

**Target**

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**Images**
Western blot - Anti-beta Tubulin antibody (ab15568)

All lanes: Anti-beta Tubulin antibody (ab15568) at 1 µg/ml

Lane 1: Human brain tissue lysate - total protein (ab29466)
Lane 2: U2OS (Human osteosarcoma cell line) Whole Cell Lysate

Lysates/proteins at 10 µg per lane.

Secondary
All lanes: Goat polyclonal to Rabbit IgG - H&L - Pre-Adsorbed (HRP) at 1/3000 dilution

Predicted band size: 55 kDa
Observed band size: 55 kDa

ICC/IF image of ab15568 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 (ab15568, 1µg/ml) overnight at +4°C. The secondary antibody (green) was ab96899, DyLight® 488 goat anti-rabbit IgG (H+L) 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.
Immunocytochemistry/ Immunofluorescence - Anti-beta Tubulin antibody (ab15568)

This image is courtesy of an anonymous Abreview.

ab15568 staining beta Tubulin in IMR32 Human neuroblastoma cells by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with paraformaldehyde, permeabilized with 0.3% Triton X-100 and blocked with 1% BSA for 1 hour at 25°C. Samples were incubated with primary antibody (1/100 in 1% BSA containing TBST) for 16 hours at 4°C. A Cy3®-conjugated Goat anti-rabbit IgG polyclonal (1:1000) was used as the secondary antibody. Blue - nuclei (DAPI).

Immunohistochemistry/ Immunofluorescence - Anti-beta Tubulin antibody (ab15568)

ab15568 staining beta Tubulin in Human lung by Immunohistochemistry (FFPE-sections).
Western blot - Anti-beta Tubulin antibody (ab15568)

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