**Product datasheet**

**Anti-beta Tubulin antibody - Loading Control (HRP)**

*ab21058*

★★★★★ 3 Abreviews  67 References  3 Images

**Overview**

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product name</strong></td>
<td>Anti-beta Tubulin antibody - Loading Control (HRP)</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Rabbit polyclonal to beta Tubulin - Loading Control (HRP)</td>
</tr>
<tr>
<td><strong>Host species</strong></td>
<td>Rabbit</td>
</tr>
<tr>
<td><strong>Conjugation</strong></td>
<td>HRP</td>
</tr>
<tr>
<td><strong>Tested applications</strong></td>
<td>Suitable for: ICC/IF, WB, IHC-P</td>
</tr>
<tr>
<td><strong>Species reactivity</strong></td>
<td>Reacts with: Mouse, Rat, Human, Pig</td>
</tr>
<tr>
<td><strong>Immunogen</strong></td>
<td>Synthetic peptide corresponding to Human beta Tubulin aa 1-100 conjugated to keyhole limpet haemocyanin. (Peptide available as ab20775)</td>
</tr>
<tr>
<td><strong>Positive control</strong></td>
<td>HeLa Whole Cell Lysate, A431 Whole Cell Lysate, NIH 3T3 (Mouse embryonic fibroblast cell line) Whole Cell Lysate, MEF1 (Mouse embryonic fibroblast cell line) Whole Cell Lysate, Brain (Mouse) Tissue Lysate, Spinal Cord (Mouse) Tissue Lysate, Ovary (Mouse) Tissue Lysate - normal tissue, PC12 (Rat adrenal pheochromocytoma cell line) Whole Cell Lysate, Brain (Rat) Tissue Lysate - normal tissue IHC-P: FFPE normal human colon tissue sections.</td>
</tr>
</tbody>
</table>

**Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td><strong>Form</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Storage instructions</strong></td>
<td>Shipped at 4°C. Store at -20°C. Avoid freeze / thaw cycle.</td>
</tr>
<tr>
<td><strong>Storage buffer</strong></td>
<td>pH: 7.40</td>
</tr>
<tr>
<td></td>
<td>Preservative: 0.1% CMIT/MIT 3:1</td>
</tr>
<tr>
<td></td>
<td>Constituents: PBS, 1% BSA, 30% Glycerol</td>
</tr>
<tr>
<td><strong>Purity</strong></td>
<td>Immunogen affinity purified</td>
</tr>
<tr>
<td><strong>Clonality</strong></td>
<td>Polyclonal</td>
</tr>
<tr>
<td><strong>Isotype</strong></td>
<td>IgG</td>
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</table>

**Applications**
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 6
Skin creases, congenital symmetric circumferential, 1

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.

Images
Western blot - Anti-beta Tubulin antibody - Loading Control (HRP) (ab21058) at 1 µg/ml

Lane 1: NIH 3T3 whole cell lysate (ab7179)
Lane 2: MEF1 (Mouse embryonic fibroblast cell line) Whole Cell Lysate
Lane 3: Brain (Mouse) Tissue Lysate
Lane 4: Spinal Cord (Mouse) Tissue Lysate
Lane 5: Ovary (Mouse) Tissue Lysate - normal tissue
Lane 6: PC12 (Rat adrenal pheochromocytoma cell line) Whole Cell Lysate
Lane 7: Brain (Rat) Tissue Lysate - normal tissue

Lysates/proteins at 10 µg per lane.

Developed using the ECL technique.

Performed under reducing conditions.

**Predicted band size:** 50 kDa

**Observed band size:** 51 kDa

*why is the actual band size different from the predicted?*
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Tubulin antibody - Loading Control (HRP) (ab21058)

IHC image of beta Tubulin staining in a section of formalin-fixed paraffin-embedded normal human colon tissue performed on a Leica BOND™. 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 ab21058, 1/100 dilution, for 15 mins at room temperature. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset negative 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

Western blot - Anti-beta Tubulin antibody - Loading Control (HRP) (ab21058)

All lanes : Anti-beta Tubulin antibody - Loading Control (HRP) (ab21058) at 1/1000 dilution

Lane 1 : HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate

Lane 2 : A431 whole cell lysate (ab7909)

Lysates/proteins at 20 µg per lane.

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 50 kDa
Observed band size: 50 kDa

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