

## HRP anti-Tubulin $\beta$ 3 (TUBB3) Antibody

<b>Catalog# / Size</b>	801205 / 25 $\mu$ g 801206 / 100 $\mu$ g
<b>Clone</b>	TUJ1
<b>Regulatory Status</b>	RUO
<b>Other Names</b>	CDCBM, CDCBM1, CFEOM3, CFEOM3A, FEOM3, TUBB4, Tubulin beta-3 chain, tubulin beta-III, tubulin beta-4 chain, class III beta-tubulin
<b>Isotype</b>	Mouse IgG2a, $\kappa$
<b>Description</b>	Tubulin is the main component of microtubules. In adults, tubulin beta 3 (TUBB3) is primarily expressed in neurons and is commonly used as a neuronal marker. It plays an important role in neuronal cell proliferation and differentiation. Mutations in this gene cause congenital fibrosis of the type 3 extraocular muscles. Tubulin beta 3 (TUBB3) is also found in a wide range of tumors. Studies indicate that it is a predictive and prognostic marker in various tumors.

### Product Details

<b>Verified Reactivity</b>	Human, Mouse, Rat
<b>Antibody Type</b>	Monoclonal
<b>Host Species</b>	Mouse
<b>Immunogen</b>	This antibody was raised against microtubules derived from rat brain.
<b>Formulation</b>	This antibody is provided in 50% glycerol in aqueous buffered solutions with preservatives.
<b>Preparation</b>	The antibody was purified by affinity chromatography and conjugated with HRP under optimal conditions.
<b>Concentration</b>	0.5 mg/ml
<b>Storage &amp; Handling</b>	Upon receipt, the antibody solution should be stored undiluted at -20°C, and protected from prolonged exposure to light.
<b>Application</b>	<a href="#">WB - Quality tested</a> <a href="#">IHC-P - Verified</a>
<b>Recommended Usage</b>	Each lot of this antibody is quality control tested by <a href="#">Western blotting</a> . For Western blotting, the suggested use of this reagent is 0.5 - 1.0 $\mu$ g per ml. For immunohistochemical staining on formalin-fixed paraffin-embedded tissue sections, the suggested use of this reagent is 1.0 - 5.0 $\mu$ g per ml. It is recommended that the reagent be titrated for optimal performance for each application.
<b>Application Notes</b>	Additional reported applications (for the relevant formats) include: flow cytometry <sup>4</sup> , immunofluorescence microscopy <sup>1-5,7</sup> , immunohistochemistry <sup>5,7</sup> , Western blotting <sup>8</sup> , and spatial biology (IBEX) <sup>9,10</sup> .  This antibody is well characterized and highly reactive to neuron specific Class III $\beta$ -tubulin ( $\beta$ III). TUJ1 does not identify $\beta$ -tubulin found in glial cells. TUJ1 recognizes an epitope located within the last 15 C-terminal residues <sup>8</sup> .
<b>Application References</b>	<ol style="list-style-type: none"> <li>Nishimura K, <i>et al.</i> 2017. <i>PLoS One</i>. 12(1): e0170568. <b>(ICC)</b></li> <li>Jongbloets J, <i>et al.</i> 2017. <i>Nat Commun</i>. 8: 14666. <b>(ICC)</b> <a href="#">PubMed</a></li> <li>Liu W.J, <i>et al.</i> 2015. <i>Eur J Histochem</i>. 59(1): 2464. <b>(ICC)</b> <a href="#">PubMed</a></li> <li>Chintalapudi SR, <i>et al.</i> 2016. <i>Front Aging Neurosci</i>. 8:93. <b>(FC, ICC)</b> <a href="#">PubMed</a></li> <li>Ambasudhan R, <i>et al.</i> 2011. <i>Cell Stem Cell</i>. 9(2):113. <b>(IHC, ICC)</b></li> <li>Hu X, <i>et al.</i> 2006. <i>Nature Neurosci</i>. 9(12):1520. <b>(WB)</b> <a href="#">PubMed</a></li> <li>Zechner D., <i>et al.</i> 2003. <i>Develop Biology</i>. 258(2):406. <b>(ICC, IHC)</b></li> <li>Lee MK, <i>et al.</i> 1990. <i>Proc. Natl. Acad. Sci. USA</i> 18:7195. <b>(WB)</b></li> <li>Radtke AJ, <i>et al.</i> 2020. <i>Proc Natl Acad Sci USA</i>. 117:33455-33465. (SB) <a href="#">PubMed</a></li> <li>Radtke AJ, <i>et al.</i> 2022. <i>Nat Protoc</i>. 17:378-401. (SB) <a href="#">PubMed</a></li> </ol>
<b>(PubMed link indicates BioLegend citation)</b>	

**RRID** AB\_2721333 (BioLegend Cat. No. 801205)  
AB\_2721334 (BioLegend Cat. No. 801206)

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## Antigen Details

<b>Structure</b>	Tubulin $\beta$ 3 is a 450 amino acid protein with a molecular mass of ~50 kD.
<b>Distribution</b>	Tissue distribution: central and peripheral nervous system. Cellular distribution: cytosol, cytoskeleton and nucleus.
<b>Function</b>	Tubulin $\beta$ 3 is the major constituent of microtubules, and plays a critical role in proper axon guidance and maintenance.
<b>Interaction</b>	Alpha tubulin, kinesin and dynein.
<b>Cell Type</b>	Mature Neurons, Neural Stem Cells
<b>Biology Area</b>	Cell Biology, Neuroscience, Neuroscience Cell Markers, Stem Cells
<b>Molecular Family</b>	Microtubules
<b>Antigen References</b>	1. Zhao X, <i>et al.</i> 2017. Med Sci Monit. 22: 3915. 2. Lebok P, <i>et al.</i> 2016. Oncol Lett. 11(3):1987. 3. Du J, <i>et al.</i> 2015. BMC Cancer. 15:536. <a href="#">PubMed</a> 4. Rogue DM., <i>et al.</i> 2013. Clin Exp Metastasis. 31(1): 101. 5. Ploussard G, <i>et al.</i> 2010. Cancer Res. 70(22):9253. <a href="#">PubMed</a>
<b>Gene ID</b>	<a href="#">10381</a>

## Related Protocols

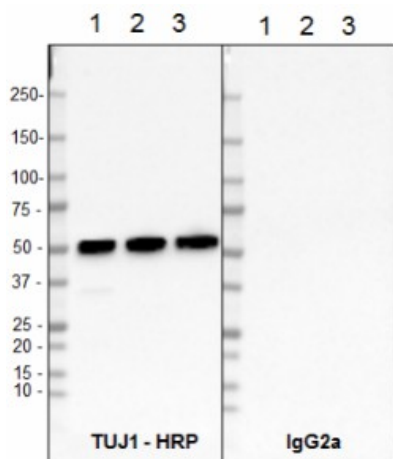
[Western Blotting Protocol](#)

[Immunohistochemistry Protocol for Paraffin-Embedded Sections](#)

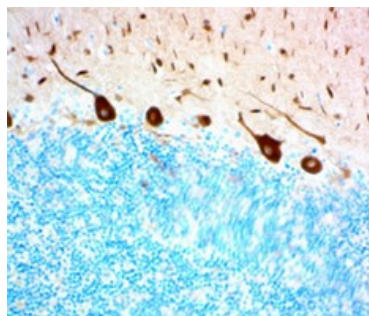
## Other Formats

Alexa Fluor® 488 anti-Tubulin  $\beta$  3 (TUBB3), Purified anti-Tubulin  $\beta$  3 (TUBB3), Alexa Fluor® 594 anti-Tubulin  $\beta$  3 (TUBB3), Alexa Fluor® 647 anti-Tubulin  $\beta$  3 (TUBB3), HRP anti-Tubulin  $\beta$  3 (TUBB3), Biotin anti-Tubulin  $\beta$  3 (TUBB3), APC anti-Tubulin  $\beta$  3 (TUBB3), PE/Cyanine7 anti-Tubulin  $\beta$  3 (TUBB3), PerCP/Cyanine5.5 anti-Tubulin  $\beta$  3 (TUBB3), PE anti-Tubulin  $\beta$  3 (TUBB3)

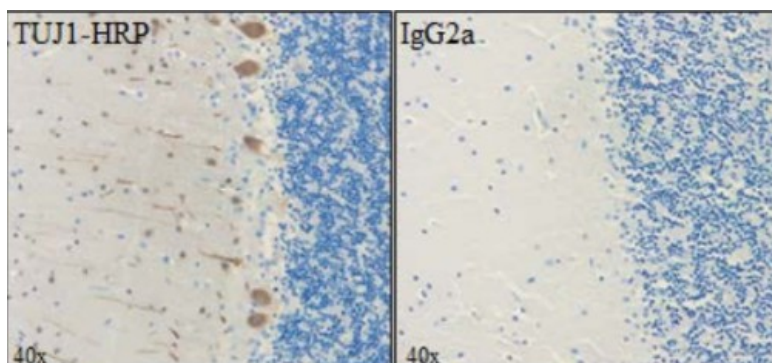
## Product Data



Western blot of HRP anti-Tubulin  $\beta$  3 (TUBB3) antibody (clone TUJ1). Lane 1: 5  $\mu$ g of human brain tissue lysate; Lane 2: 5  $\mu$ g of rat brain tissue lysate; Lane 3: 5  $\mu$ g of mouse brain tissue lysate. The blots were incubated with the HRP-conjugated or mouse IgG2a antibody at 1  $\mu$ g/mL overnight at 4°C. HRP Tubulin  $\beta$  3 was visualized using chemiluminescence detection. HRP labeled goat anti-mouse secondary antibody was used for the blot that was incubated with the IgG2a primary antibody followed by chemiluminescence detection.



IHC staining of HRP anti-Tubulin  $\beta$  3 (TUBB3) antibody (clone TUJ1) on formalin-fixed paraffin-embedded human cerebellum brain tissue. After antigen retrieval using Sodium Citrate H.I.E.R., the tissue was incubated with the primary antibody at 2.5  $\mu$ g/mL for one hour at room temperature. DAB was used for detection followed by hematoxylin counterstaining and bluing solution counterstaining, according to the protocol provided.



IHC staining of anti-Tubulin  $\beta$  3 (TUBB3) antibody (clone TUJ1) on formalin-fixed, paraffin-embedded human cerebellum tissue. Following antigen retrieval using Sodium Citrate H.E.I.R, the tissue was incubated with HRP conjugated antibody at room temperature for one hour at 1  $\mu$ g/mL. Biolegend's Ultra-Streptavidin HRP was used for detection for mouse IgG2a antibody. Tissues were counterstained with hematoxylin.

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