

## Alexa Fluor® 594 anti-Tubulin $\beta$ 3 (TUBB3) Antibody

<b>Catalog# / Size</b>	801207 / 25 $\mu$ g 801208 / 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>	Phosphate-buffered solution, pH 7.2, containing no preservatives solution.
<b>Preparation</b>	The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 594 under optimal conditions.
<b>Concentration</b>	0.5 mg/ml
<b>Storage &amp; Handling</b>	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. <b>Do not freeze.</b>
<b>Application</b>	<a href="#">ICC - Quality tested</a> <a href="#">3D IHC - Verified</a>
<b>Recommended Usage</b>	<p>Each lot of this antibody is quality control tested by immunocytochemistry. For immunocytochemistry, a concentration range of 0.5 - 1.0 <math>\mu</math>g/ml is recommended. For 3D immunohistochemistry on formalin-fixed tissues, a concentration of 5.0 <math>\mu</math>g/mL is suggested. It is recommended that the reagent be titrated for optimal performance for each application.</p> <p>* Alexa Fluor® 594 has an excitation maximum of 590 nm, and a maximum emission of 617 nm.</p> <p>Alexa Fluor® and Pacific Blue™ are trademarks of Life Technologies Corporation.</p> <p><a href="#">View full statement regarding label licenses</a></p>
<b>Application Notes</b>	<p>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>.</p> <p>This antibody is well characterized and highly reactive to neuron specific Class III <math>\beta</math>-tubulin (<math>\beta</math>III). TUJ1 does not identify <math>\beta</math>-tubulin found in glial cells. TUJ1 recognizes an epitope located within the last 15 C-terminal residues<sup>8</sup>.</p>
<b>Application References</b>	<ol style="list-style-type: none"> <li>1. Nishimura K, <i>et al.</i> 2017. <i>PLoS One</i>. 12(1): e0170568. <b>(ICC)</b></li> <li>2. Jongbloets J, <i>et al.</i> 2017. <i>Nat Commun</i>. 8: 14666. <b>(ICC)</b> <a href="#">PubMed</a></li> <li>3. 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>4. Chintalapudi SR, <i>et al.</i> 2016. <i>Front Aging Neurosci</i>. 8:93. <b>(FC, ICC)</b> <a href="#">PubMed</a></li> <li>5. Ambasadhan R, <i>et al.</i> 2011. <i>Cell Stem Cell</i>. 9(2):113. <b>(IHC, ICC)</b></li> </ol>
<b>(PubMed link indicates BioLegend citation)</b>	

6. Hu X, *et al.* 2006. *Nature Neuroscicene*. 9(12):1520. (WB) [PubMed](#)
7. Zechner D., *et al.* 2003. *Develop Biology*. 258(2):406. (ICC, IHC)
8. Lee MK, *et al.* 1990. *Proc. Natl. Acad. Sci. USA* 18:7195. (WB)
9. Radtke AJ, *et al.* 2020. *Proc Natl Acad Sci USA*. 117:33455-33465. (SB) [PubMed](#)
10. Radtke AJ, *et al.* 2022. *Nat Protoc*. 17:378-401. (SB) [PubMed](#)

#### Product Citations

1. Santos TE, *et al.* 2020. *Cell Reports*. 32(3):107907. [PubMed](#)
2. LaClair KD, *et al.* 2020. *Acta Neuropathol*. 140:121. [PubMed](#)

#### RRID

AB\_2650635 (BioLegend Cat. No. 801207)  
AB\_2650636 (BioLegend Cat. No. 801208)

#### Disclaimer

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## Antigen Details

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<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>	<ol style="list-style-type: none"><li>1. Zhao X, <i>et al.</i> 2017. <i>Med Sci Monit</i>. 22: 3915.</li><li>2. Lebok P, <i>et al.</i> 2016. <i>Oncol Lett</i>. 11(3):1987.</li><li>3. Du J, <i>et al.</i> 2015. <i>BMC Cancer</i>. 15:536. <a href="#">PubMed</a></li><li>4. Rogue DM., <i>et al.</i> 2013. <i>Clin Exp Metastasis</i>. 31(1): 101.</li><li>5. Ploussard G, <i>et al.</i> 2010. <i>Cancer Res</i>. 70(22):9253. <a href="#">PubMed</a></li></ol>
<b>Gene ID</b>	<a href="#">10381</a>

## Related Protocols

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[Ce3D™ Tissue Clearing Kit](#)

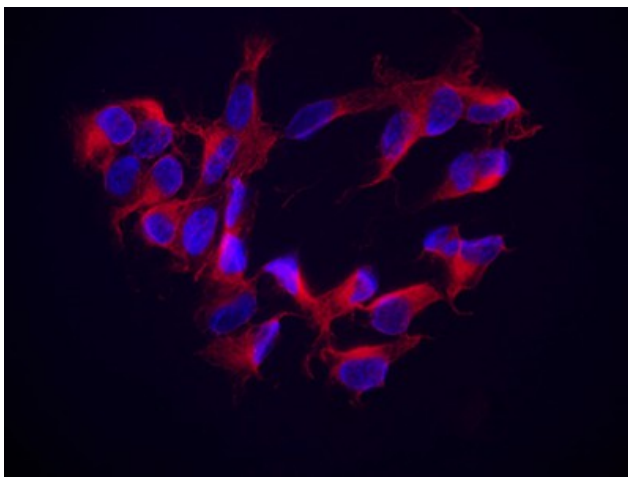
## Other Formats

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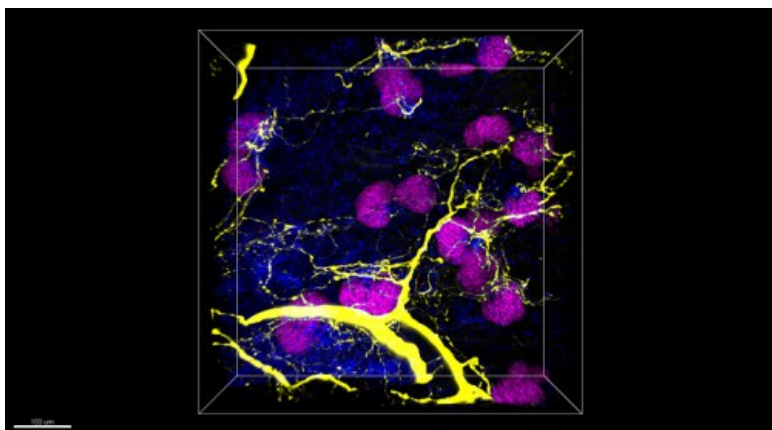
Alexa Fluor® 488 anti-Tubulin  $\beta$  3 (TUBB3), Purified anti-Tubulin  $\beta$  3 (TUBB3), Alexa Fluor® 594 anti-Tubulin  $\beta$  3 (TUBB3), Alexa Fluor® 647 anti-Tubulin  $\beta$  3 (TUBB3), HRP anti-Tubulin  $\beta$  3 (TUBB3), Biotin anti-Tubulin  $\beta$  3 (TUBB3), APC anti-Tubulin  $\beta$  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

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ICC staining of Alexa Fluor® 594 anti-Tubulin  $\beta$  3 (TUBB3) (clone TUJ1) on SH-SY5Y neuroblastoma cells. The cells were fixed with 4% PFA, permeabilized with 0.1% Triton X-100, and blocked with 2% normal goat serum. The cells were then stained with 1  $\mu$ g/ml of the primary antibody for three hours at room temperature. Nuclei were counterstained with Hoechst 33342. The image was captured with a 60X objective.



Paraformaldehyde-fixed (4%), 500  $\mu$ m-thick mouse kidney section was processed according to the Ce3DTM Tissue Clearing Kit protocol (cat. no. 427701). The section was costained with anti-Tubulin  $\beta$  3 (TUBB3) Antibody (clone TUJ1) Alexa Fluor® 594 at 5  $\mu$ g/mL (yellow), and anti-mouse Podoplanin Antibody (clone PMab-1) Alexa Fluor® 647 at 5  $\mu$ g/mL (magenta) and counterstained with DAPI (blue). The section was then optically cleared and mounted in a sample chamber. The image was captured with a 20X objective using Zeiss 780 confocal microscope and processed by Imaris image analysis software.

[Watch the video.](#)

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