

Alexa Fluor® 647 anti-Tubulin β 3 (TUBB3) Antibody

Catalog# / Size	801209 / 25 μ g 801210 / 100 μ g
Clone	TUJ1
Regulatory Status	RUO
Other Names	CDCBM, CDCBM1, CFEOM3, CFEOM3A, FEOM3, TUBB4, Tubulin beta-3 chain, tubulin beta-III, tubulin beta-4 chain, class III beta-tubulin
Isotype	Mouse IgG2a, κ
Description	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

Verified Reactivity	Human, Mouse, Rat
Antibody Type	Monoclonal
Host Species	Mouse
Immunogen	This antibody was raised against microtubules derived from rat brain.
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 647 under optimal conditions.
Concentration	0.5 mg/ml
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Application	ICC - Quality tested ICFC, 3D IHC - Verified
Recommended Usage	<p>Each lot of this antibody is quality control tested by immunocytochemistry. For immunocytochemistry, a concentration range of 1.0 - 5.0 μg/ml is recommended. For flow cytometric staining, the suggested use of this reagent is \leq5.0 μg per million cells. For 3D immunohistochemistry on formalin-fixed tissues, a concentration of 5.0 μg/mL is suggested. It is recommended that the reagent be titrated for optimal performance for each application.</p> <p>Alexa Fluor® and Pacific Blue™ are trademarks of Life Technologies Corporation.</p> <p>View full statement regarding label licenses</p>
Excitation Laser	Red Laser (633 nm)
Application Notes	<p>Additional reported applications (for the relevant formats) include: flow cytometry⁴, immunofluorescence microscopy^{1-5,7}, immunohistochemistry^{5,7}, and Western blotting⁸.</p> <p>This antibody is well characterized and highly reactive to neuron specific Class III β-tubulin (βIII). TUJ1 does not identify β-tubulin found in glial cells. TUJ1 recognizes an epitope located within the last 15 C-terminal residues⁸.</p>
Application References	<ol style="list-style-type: none"> 1. Nishimura K, <i>et al.</i> 2017. <i>PLoS One</i>. 12(1): e0170568. (ICC) 2. Jongbloets J, <i>et al.</i> 2017. <i>Nat Commun</i>. 8: 14666. (ICC) PubMed 3. Liu W.J, <i>et al.</i> 2015. <i>Eur J Histochem</i>. 59(1): 2464. (ICC) PubMed 4. Chintalapudi SR, <i>et al.</i> 2016. <i>Front Aging Neurosci</i>. 8:93. (FC, ICC) PubMed 5. Ambasadhan R, <i>et al.</i> 2011. <i>Cell Stem Cell</i>. 9(2):113. (IHC, ICC)
(PubMed link indicates BioLegend citation)	

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)

Product Citations

1. Arsić A, et al. 2020. *Sci Rep*. 10:6441. [PubMed](#)
2. Holman HA, et al. 2019. *Front Cell Neurosci*. 13:186. [PubMed](#)
3. Funato K, et al. 2021. *Cell Stem Cell*. 28(5):894-905.e7. [PubMed](#)
4. Bloom ML, et al. 2020. *Chemical Senses*. 45(5):333-346. [PubMed](#)

RRID

AB_2686930 (BioLegend Cat. No. 801209)
AB_2686931 (BioLegend Cat. No. 801210)

Antigen Details

Structure	Tubulin β 3 is a 450 amino acid protein with a molecular mass of ~50 kD.
Distribution	Tissue distribution: central and peripheral nervous system. Cellular distribution: cytosol, cytoskeleton and nucleus.
Function	Tubulin β 3 is the major constituent of microtubules, and plays a critical role in proper axon guidance and maintenance.
Interaction	Alpha tubulin, kinesin and dynein.
Cell Type	Mature Neurons, Neural Stem Cells
Biology Area	Cell Biology, Neuroscience, Neuroscience Cell Markers, Stem Cells
Molecular Family	Microtubules
Antigen References	<ol style="list-style-type: none">1. Zhao X, et al. 2017. <i>Med Sci Monit</i>. 22: 3915.2. Lebok P, et al. 2016. <i>Oncol Lett</i>. 11(3):1987.3. Du J, et al. 2015. <i>BMC Cancer</i>. 15:536. PubMed4. Rogue DM., et al. 2013. <i>Clin Exp Metastasis</i>. 31(1): 101.5. Ploussard G, et al. 2010. <i>Cancer Res</i>. 70(22):9253. PubMed
Gene ID	10381

Related Protocols

[Immunocytochemistry Staining Protocol](#)

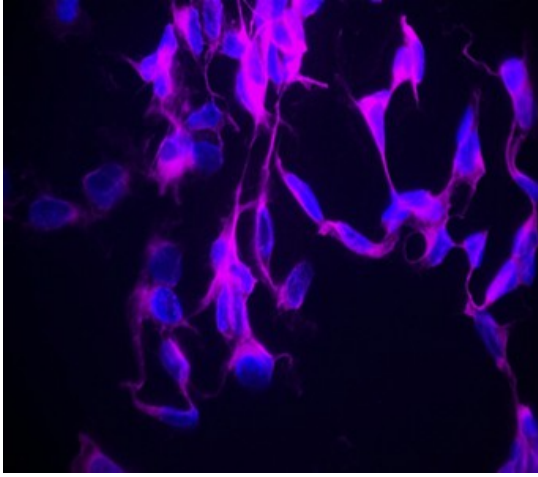
[Intracellular Flow Cytometry Staining Protocol](#)

[Ce3D™ Tissue Clearing Kit](#)

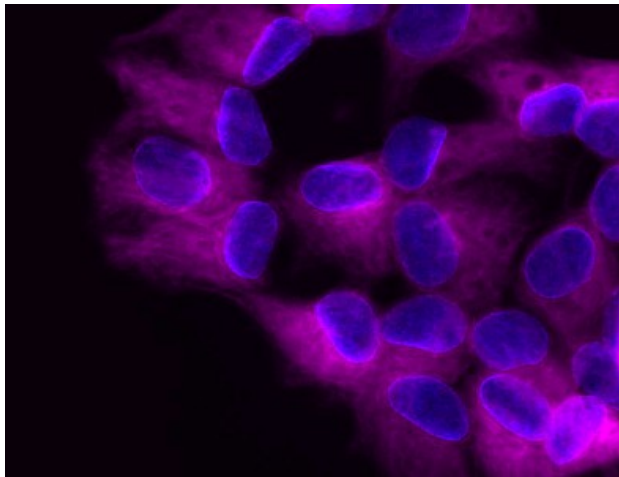
Other Formats

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

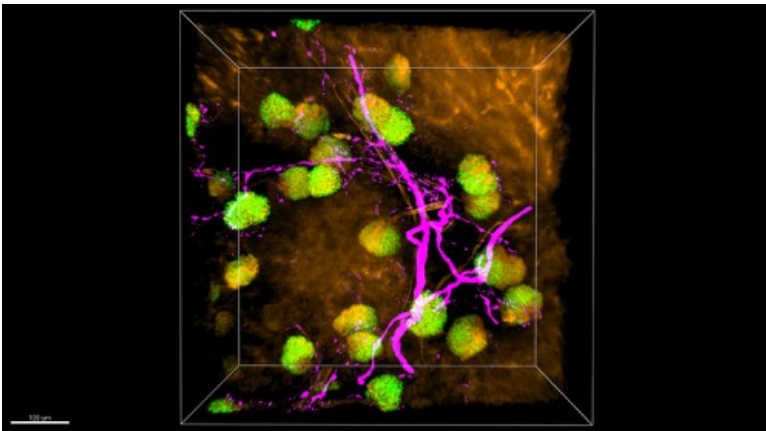
Product Data



ICC staining of Alexa Fluor® 647 anti-Tubulin β 3 (TUBB3) antibody (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 μ 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.



ICC staining of Alexa Fluor® 647 anti-Tubulin β 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 and 0.02% BSA. The cells were then stained with 1 μ g/ml of the primary antibody for three hours at room temperature. Nuclei were counterstained with DAPI. The image was captured with a 40X objective.



Paraformaldehyde-fixed (4%), 500 μ m-thick mouse kidney section was processed according to the Ce3DTM Tissue Clearing Kit protocol (cat. no. 427701). The section was costained with anti-mouse Podoplanin Antibody (clone PMAb-1) Alexa Fluor® 488 at 5 μ g/mL (green), anti-mouse CD31 Antibody (clone MEC13.3) Alexa Fluor® 594 at 5 μ g/mL (orange), and anti-Tubulin β 3 (TUBB3) Antibody (Clone TUJ1) Alexa Fluor® 647 at 5 μ g/mL (magenta). 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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