

Biotin anti-Tubulin β 3 (TUBB3) Antibody

Catalog# / Size	801211 / 25 μ g 801212 / 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 biotin under optimal conditions.
Concentration	0.5 mg/ml
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C. Do not freeze.
Application	WB - Quality tested IHC-P - Verified
Recommended Usage	Each lot of this antibody is quality control tested by Western blotting . For Western blotting, the suggested use of this reagent is 1.0 - 5.0 μ g per ml. For immunohistochemical staining on formalin-fixed paraffin-embedded tissue sections, the suggested use of this reagent is 2.5 - 5.0 μ g per ml. It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	Additional reported applications (for the relevant formats) include: flow cytometry ⁴ , immunofluorescence microscopy ^{1-5,7} , immunohistochemistry ^{5,7} , Western blotting ⁸ , and spatial biology (IBEX) ^{9,10} . This antibody is well characterized and highly reactive to neuron specific Class III β -tubulin (β III). TUJ1 does not identify β -tubulin found in glial cells. TUJ1 recognizes an epitope located within the last 15 C-terminal residues ⁸ .

Application References

(PubMed link indicates BioLegend citation)

- Nishimura K, *et al.* 2017. *PLoS One*. 12(1): e0170568. **(ICC)**
- Jongbloets J, *et al.* 2017. *Nat Commun*. 8: 14666. **(ICC)** [PubMed](#)
- Liu W.J, *et al.* 2015. *Eur J Histochem*. 59(1): 2464. **(ICC)** [PubMed](#)
- Chintalapudi SR, *et al.* 2016. *Front Aging Neurosci*. 8:93. **(FC, ICC)** [PubMed](#)
- Ambasudhan R, *et al.* 2011. *Cell Stem Cell*. 9(2):113. **(IHC, ICC)**
- Hu X, *et al.* 2006. *Nature Neurosci*. 9(12):1520. **(WB)** [PubMed](#)
- Zechner D., *et al.* 2003. *Develop Biol*. 258(2):406. **(ICC, IHC)**
- Lee MK, *et al.* 1990. *Proc. Natl. Acad. Sci. USA* 18:7195. **(WB)**
- Radtke AJ, *et al.* 2020. *Proc Natl Acad Sci USA*. 117:33455-33465. (SB) [PubMed](#)
- Radtke AJ, *et al.* 2022. *Nat Protoc*. 17:378-401. (SB) [PubMed](#)

Product Citations

1. Gonzalez Acera M, *et al.* 2021. Cells. 10: [PubMed](#)
2. Di Stefano B, *et al.* 2019. Cell Stem Cell. 25:622. [PubMed](#)
3. Warchol ME *et al.* 2019. The Journal of comparative neurology. 527(11):1913-1928 . [PubMed](#)

RRID AB_2721322 (BioLegend Cat. No. 801211)
AB_2721321 (BioLegend Cat. No. 801212)

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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, <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. PubMed4. 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. PubMed
Gene ID	10381

Related Protocols

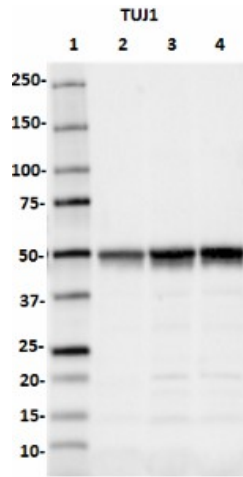
[Western Blotting Protocol](#)

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

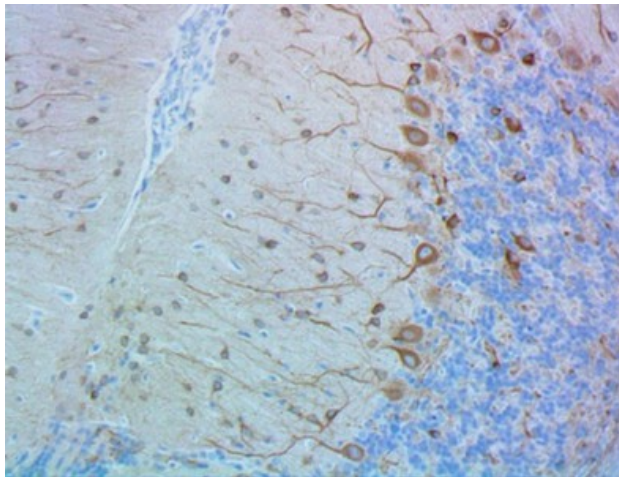
Other Formats

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



Western blot of Biotin anti-Tubulin β 3 (TUBB3) antibody (clone TUJ1). Lane 1: Molecular weight marker; Lane 2: 20 μ g of human brain lysate; Lane 3: 20 μ g of mouse brain lysate; Lane 4: 20 μ g of rat brain lysate. The blot was incubated with 1.0 μ g/mL of primary antibody overnight at 4°C, followed by incubation with HRP Streptavidin secondary antibody (Cat. No. 405210), for 60-minutes at room temperature. Enhanced chemiluminescence was used as the detection system.



IHC staining of Biotin anti-Tubulin β 3 (TUBB3) antibody (clone TUJ1) on formalin-fixed paraffin-embedded rat cerebellum brain tissue. Following antigen retrieval using Sodium Citrate H.I.E.R., the tissue was incubated with the primary antibody at 5 μ g/mL for 1 hour at room temperature. For detection, the HRP labeling reagent and DAB from BioLegend Ultra Streptavidin (USA) HRP Detection Kit was used (Multi-Species, component No 5, DAB; Cat. No. 929901). The tissue was counterstained with hematoxylin and bluing solution. The image was taken using 20X objective.

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