

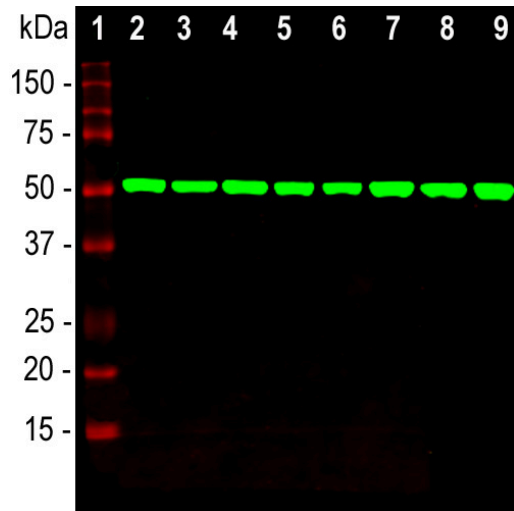
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HGNC name: TUBB
RRID: [AB_2492290](https://eutils.ncbi.nlm.nih.gov/entrez/eutils/rrid.cgi?db=AB)
Immunogen: Pig brain tubulin
Format: Purified antibody at 1mg/ mL in 50% PBS, 50% glycerol plus 5mM NaN₃
Storage: Shipped on ice. Store at 4°C for short term, for longer term at -20°C. Avoid freeze / thaw cycles.
Recommended dilutions:
 Western blot: 1:5,000-1:10,000,
 ICC/IF and IHC: 1:1000-1:5,000.

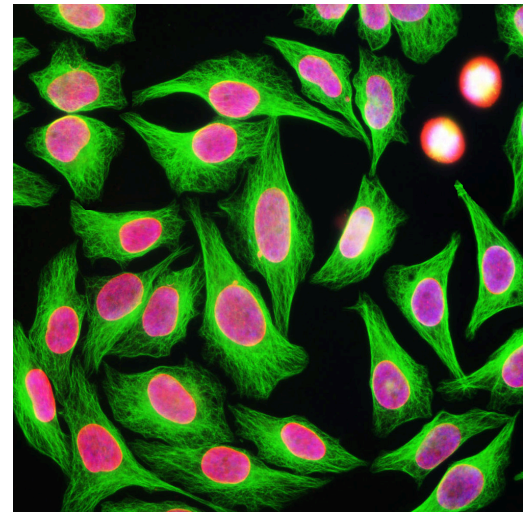
References:

- Nogales E. Structural insight into microtubule function. *Annu. Rev. Biophys. Biomol. Struct.* 30:397-420 (2001).
- Perez EA. Microtubule inhibitors: Differentiating tubulin-inhibiting agents based on mechanisms of action, clinical activity, and resistance. *Mol. Cancer Ther.* 8:2086-2095 (2009).

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
Western blot, ICC/IF, IHC	Mouse	IgG2a	50kDa	Hu, Mo, Rt, Ms



Western blot analysis of equal amounts of cell line and whole brain lysates using mouse mAb to β -tubulin MCA-4E4, dilution 1:5,000 in green: [1] protein standard (red), [2] HEK293, [3] HeLa, [4] SH-SY5Y, [5] COS-1, [6] NIH-3T3, [7] C6 cells, [8] rat brain, and [9] mouse brain. Strong band at 50 kDa corresponds to the β -tubulin proteins.



Immunofluorescence analysis of HeLa cells stained with mouse mAb to β -tubulin, MCA-4E4, dilution 1:5,000 in green, and costained with chicken pAb to lamin A/C, CPCA-LaminAC, dilution 1:2,000, in red. Blue is DAPI staining of nuclear DNA. MCA-4E4 antibody produces strong staining of cytoplasmic microtubules, while the lamin A/C antibody specifically labels the nuclear membrane of these cells.

Background: Tubulins are a major class of cytoskeletal proteins and divided into five distinct classes, namely α , β , γ , δ and ϵ tubulins. The most abundant members of the tubulin family are the α and β -tubulins and are the major components of cytoplasmic microtubules. The various subunits have molecular weights of approximately 55 kDa and are 50% identical to one another at the protein sequence level. Microtubules are assembled from stable dimer of one α and one β subunit, and polymerization from dimers to assembled microtubules requires GTP. Microtubules are involved in a number of essential cellular functions including the maintenance of cell shape, transport, motility, cell signaling and mitosis (1). β -tubulin is regarded as a “house keeping” protein which is generally not altered much in expression as a result of experimental manipulations. As a result antibodies to β -tubulin are widely used as loading controls in western blotting as a standard by which the levels of other proteins may be measured. The important role of microtubules in cell division makes them a desirable target for the development of chemotherapeutic agents directed against rapidly dividing cancer cells (2). MCA-4E4 was raised against tubulin purified from pig brain and reacted with recombinant β -tubulin (Abcam), but not recombinant α -tubulin (Abnova) by ELISA and dot blots.

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Abbreviation Key:

mAb—Monoclonal Antibody pAb—Polyclonal Antibody WB—Western Blot IF—Immunofluorescence ICC—Immunocytochemistry IHC—Immunohistochemistry E—ELISA Hu—Human Mo—Monkey Do—Dog Rt—Rat Ms—Mouse Bo—Cow Po—Pig Ho—Horse Ch—Chicken Dr—*D. rerio* Dm—*D. melanogaster* Ce—*C. elegans* Sc—*S. cerevisiae* Sa—*S. aureus* Ec—*E. coli*.