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TUBB3 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1310a

Product Information

Application	WB, FC, ICC, E
Primary Accession	Q13509
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	2E9
Isotype	IgG1
Calculated MW	50433
Description	Tubulin, beta 3, also known as TUBB3. Tubulin is the major constituent of microtubules. It binds two moles of GTP, one at an exchangeable site on the beta chain and one at a non exchangeable site on the alpha-chain. Tubulin is a highly conserved protein with a molecular weight of ~50 kD. Microtubules play key roles in chromosome segregation in mitosis, intracellular transport, ciliary and flagellar bending, and structural support of the cytoskeleton. The two main tubulin isoforms, α- and β-tubulin, are usually products of separate genes. The β-tubulin family includes six expressed genes that produce the polypeptide isoforms known as Classes I through VI, each of which have a distinct pattern of expression. Class III β-tubulin is found in neurons and mammalian testis cells and is widely used as a neuronal marker in developmental neurobiology, neoplasia, and stem cell research. Class III β-tubulin expression in neuronal and neuroblastic tumors is differentiation dependent, and its expression in certain non-neuronal neoplasms has been associated with poor prognosis and/or resistance to chemotherapy.
Immunogen	Purified recombinant fragment of human TUBB3 expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	10381
Other Names	Tubulin beta-3 chain, Tubulin beta-4 chain, Tubulin beta-III, TUBB3, TUBB4
Dilution	WB~~1/500 - 1/2000 FC~~1/200 - 1/400 ICC~~N/A E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	TUBB3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TUBB3
Synonyms	TUBB4
Function	Tubulin is the major constituent of microtubules, protein filaments consisting of alpha- and beta-tubulin heterodimers (PubMed:34996871, PubMed:38305685, PubMed:38609661). Microtubules grow by the addition of GTP-tubulin dimers to the microtubule end, where a stabilizing cap forms (PubMed:34996871, PubMed:38305685, PubMed:38609661). Below the cap, alpha-beta tubulin heterodimers are in GDP-bound state, owing to GTPase activity of alpha-tubulin (PubMed:34996871, PubMed:38609661). TUBB3 plays a critical role in proper axon guidance and maintenance (PubMed:20074521). Binding of NTN1/Netrin-1 to its receptor UNC5C might cause dissociation of UNC5C from polymerized TUBB3 in microtubules and thereby lead to increased microtubule dynamics and axon repulsion (PubMed:28483977). Plays a role in dorsal root ganglion axon projection towards the spinal cord (PubMed:28483977).
Cellular Location	Cytoplasm, cytoskeleton. Cell projection, growth cone {ECO:0000250|UniProtKB:Q9ERD7}. Cell projection, lamellipodium {ECO:0000250|UniProtKB:Q9ERD7}. Cell projection, filopodium {ECO:0000250|UniProtKB:Q9ERD7}
Tissue Location	Expression is primarily restricted to central and peripheral nervous system. Greatly increased expression in most cancerous tissues.

References

1. Histopathology. 2007 Jun;50(7):949-52. 2. Neurochem Res. 2007 Aug;32(8):1387-98. 3. Exp Eye Res. 1995 Apr;60(4):385-400.

Images

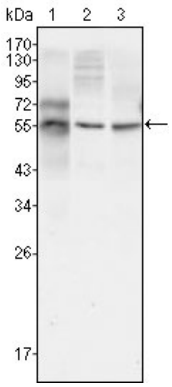
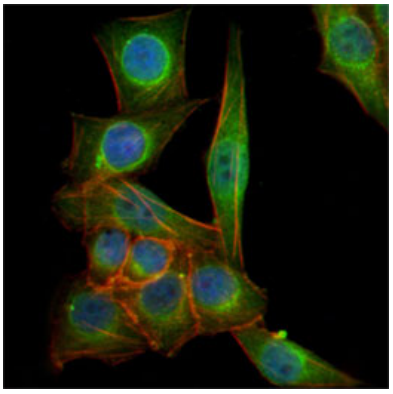


Figure 1: Western blot analysis using TUBB3 mouse mAb against HepG2 (1), A549 (2) and Hela (3) cell lysate.

Figure 2: Immunofluorescence analysis of PANC-1 cells using TUBB3 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin.



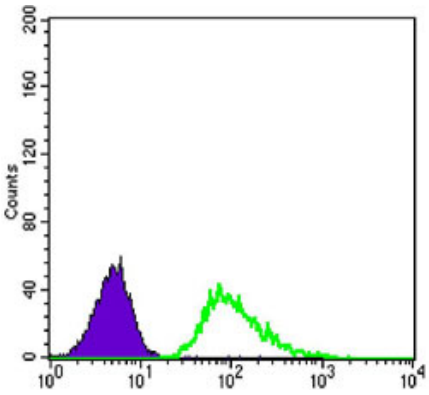


Figure 3: Flow cytometric analysis of A549 cells using TUBB3 mouse mAb (green) and negative control (purple).