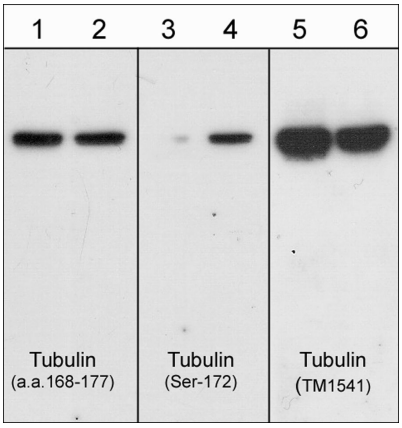
β-Tubulin (a.a. 168-177)

Cat. # TP1781
Host Rabbit Polyclonal
Size 100 µl

Background:

Microtubules (MTs) are cytoskeletal elements that play an essential role in cell division and cytoplasmic organization. MTs are dynamic polymers of α/β-tubulin heterodimers. At least two populations of MTs, called dynamic and stable according to their rates of turnover, are readily distinguishable in cells. The proteins associated with MTs (MAPs) are among the best-known factors that regulate MT dynamics and stability. In addition, a variety of different post-translational modifications may also regulate MT dynamics and stability. Phosphorylation is one of these modifications and it can occur on serine, threonine, and tyrosine residues in β-tubulin isoforms. Multiple kinases can phosphorylate Ser-444 at the C-terminus of βIII-tubulin *in vitro*. Unphosphorylated Ser-444 in βIII-tubulin is an early marker for cells of neuronal lineage, while phosphorylation of Ser-444 is upregulated after neuronal maturation and may preferentially occur in assembled MTs. By contrast, Cdk1 phosphorylation of Ser-172 in β-tubulin occurs in mitotic cells and may impair tubulin incorporation into microtubules.



Western blot analysis of purified brain tubulin untreated (lanes 1,3,5) or treated with ERK2 kinase to phosphorylate Ser-172 (lanes 2,4,6). The blot was probed with anti-β-Tubulin (a.a. 168-177) (lanes 1 & 2), anti-β-Tubulin (Ser -172) (lanes 3 & 4), and anti-β-Tubulin (TM1541) (lanes 5 & 6).

References

Fourest-Lieuvin, A. et al. (2006) Mol. Biol. Cell. 17(3):1041.
Westermann, S. & Weber, K. (2003) Nat. Rev. Mol. Cell. Biol. 4:938.
Fanarraga, M.L. et al. (1999) Eur. J. Neurosci. 11:517.
Diaz-Nido, J. et al. (1990) J Biol. Chem. 265(23):13949.

Immunogen:

βIII-Tubulin (a.a. 168-177) synthetic peptide (coupled to KLH) corresponding to amino acid residues from human βIII-tubulin. This sequence is identical to similar regions in βI, βII, and βIII-tubulin isotypes, and is well conserved in tubulins from most eukaryotic species.

Buffer and Storage:

Rabbit polyclonal, affinity-purified antibody is supplied in 100µl phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at –20°C. Do not aliquot. Stable for 1 year.

Applications:

WB	1:1,000
ICC	1:50
ELISA	1:2,000

End user should determine optimal dilution for their particular applications and experiments.
Western blot membranes were incubated with diluted antibody in 5% non-fat milk, PBS, 0.04% Tween20 for 1hour at room temperature.

Specificity:

This antibody was affinity purified using βIII-Tubulin (a.a. 168-177) peptide (without carrier). This antibody detects a 50 kDa* protein corresponding to the molecular mass of β-Tubulin on SDS-PAGE immunoblots of purified brain tubulin and mouse brain tissue.

*All molecular weights (MW) are confirmed by comparison to Bio-Rad Rainbow Markers and to western blot mobilities of known proteins with similar MW.

Related Products:

TM1541	β-Tubulin
TP1691	βIII-Tubulin (C-terminus)
TP1721	β-Tubulin (Ser-172), phospho-specific
TP1811	unphosphorylated βIII-Tubulin (Ser-444)

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