

phospho- β -Tubulin (Ser-172) Peptide

Cat. # TX1725

Size 50 μ g

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 β III-tubulin *in vitro*. Unphosphorylated Ser-444 in β III-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.

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.

Peptide Sequence:

Phospho- β III-Tubulin (Ser-172) synthetic peptide contains amino acid residues around serine 172 of human β III-tubulin. This sequence is identical to similar regions in β I, β II, and β III-tubulin isoforms, and is well conserved in tubulins from most eukaryotic species.

Buffer and Storage:

Blocking Peptide is supplied in 50 μ l phosphate-buffered saline and 0.05% sodium azide. Store at -20° C. Stable for 1 year.

Applications:

Blocking 1:1,000

ELISA 50 ng/well

End user should determine optimal concentration dependent on the concentration of the antibody.
Recommended for blocking antibody reactivity in Western blot and immunocytochemistry.
ELISA established in 96-well Nunc immunoplates where peptide was bound to plates for 2 hrs in 0.1 M sodium carbonate buffer, pH 8.5.

Specificity:

The peptide is specifically recognized by β -Tubulin (Ser-172) phospho-specific antibody (TP1721) in ELISA, and has been shown to block the reactivity of TP1721 in Western blot and immunocytochemistry.

*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:

- TP1721 β -Tubulin (Ser-172), phospho-specific
TP1781 β -Tubulin (a.a. 168-177)
TX1785 β -Tubulin (a.a. 168-177) peptide

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