

β3-Tubulin

Cat.No. 302-3P; control peptide, 100 µg peptide (lyophilized)

Data Sheet

Reconstitution/Storage	100 µg peptide, lyophilized. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use. Control peptides should also be stored at -20°C when still lyophilized!
Immunogen	Synthetic peptide corresponding to AA 443 to 450 from mouse β3-Tubulin (UniProt Id: Q9ERD7)
Recommended dilution	Optimal concentrations should be determined by the end-user.
matching antibodies	302 302, 302 304, 302 306
Remarks	This control peptide consists of the synthetic peptide (aa 443 - 450 of mouse β3-tubulin) that has been used for immunization. It has been tested in preadsorption experiments and blocks efficiently and specifically the corresponding signal in Western blots. The amount of peptide needed for efficient blocking depends on the titer and on the affinity of the antibody to the antigen.

TO BE USED IN VITRO / FOR RESEARCH ONLY NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Microtubules are involved in a wide variety of cellular activities ranging from mitosis and transport events to cell movement and the maintenance of cell shape. Tubulin itself is a globular protein which consists of two polypeptides, α-tubulin and β-tubulin. α- and β-tubulin dimers are assembled to 13 protofilaments that form a microtubule of 22 nm diameter. Tyrosine ligase adds a C-terminal tyrosine to monomeric α-tubulin. Assembled microtubules can again be detyrosinated by a cytoskeleton associated carboxypeptidase. Detyrosinated α-tubulin is referred to as Glu-α-tubulin. Another post-translational modification of detyrosinated α-tubulin is C-terminal polyglutamylation which is characteristic for microtubules in neuronal cells and the mitotic spindle. A third variant of detyrosinated α-tubulin is Δ2-tubulin which lacks the C-terminal glutamic acid. It cannot be tyrosinated by tyrosine ligase and is one of the dominant α-tubulin isoforms in neurons.

Class III β-tubulin is abundant in the central and peripheral nervous systems (CNS and PNS) where it is prominently expressed during fetal and postnatal development. It is widely used as a neuronal marker in normal and neoplastic tissues but has also been reported to be expressed in certain tumours of non-neuronal origin.

Selected General References

- Expression of class III beta-tubulin correlates with unfavorable survival outcome in patients with resected non-small cell lung cancer.
Koh Y, Jang B, Han SW, Kim TM, Oh DY, Lee SH, Kang CH, Kim DW, Im SA, Chung DH, Kim YT, et al.
Journal of thoracic oncology : official publication of the International Association for the Study of Lung Cancer (2010) 5(3): 320-5.
- Class III beta-tubulin is a component of the mitotic spindle in multiple cell types.
Jouhilahti EM, Peltonen S, Peltonen J
The journal of histochemistry and cytochemistry : official journal of the Histochemistry Society (2008) 56(12): 1113-9.
- Early born lineage of retinal neurons express class III beta-tubulin isotype.
Sharma RK, Netland PA
Brain research (2007) 1176: 11-7.
- Breakdown of axonal synaptic vesicle precursor transport by microglial nitric oxide.
Stagi M, Dittrich PS, Frank N, Iliev AI, Schwille P, Neumann H
The Journal of neuroscience : the official journal of the Society for Neuroscience (2005) 25(2): 352-62.
- Class III beta-tubulin isotype: a key cytoskeletal protein at the crossroads of developmental neurobiology and tumor neuropathology.
Katsetos CD, Legido A, Perentes E, Mörk SJ
Journal of child neurology (2003) 18(12): 851-66; discussion 867.
- Class III beta-tubulin in human development and cancer.
Katsetos CD, Herman MM, Mörk SJ
Cell motility and the cytoskeleton (2003) 55(2): 77-96.
- Primary culture of neural precursors from the ovine central nervous system (CNS).
Duittoz AH, Hevor T
Journal of neuroscience methods (2001) 107(1-2): 131-40.
- Expression of class III beta-tubulin in normal and neoplastic human tissues.
Dráberová E, Lukás Z, Ivanyi D, Viklický V, Dráber P
Histochemistry and cell biology (1998) 109(3): 231-9.
- Expression of the class III beta-tubulin isotype in developing neurons in culture.
Ferreira A, Caceres A
Journal of neuroscience research (1992) 32(4): 516-29.
- Posttranslational modification of class III beta-tubulin.
Lee MK, Rebhun LI, Frankfurter A
Proceedings of the National Academy of Sciences of the United States of America (1990) 87(18): 7195-9.