

Applications	ICC, WB
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Western blot optimal concentration	0.1µg/ml (1:10,000) as tested in rat brain cytosol fraction
ICC optimal concentration	0.25µg/ml (1:4,000) as tested in cultured primary rat neurones
Positive control	β-tubulin is expressed ubiquitously across nearly all mammalian cell and tissue types. It is also widely expressed in common cell lines (e.g. HEK293, SH-SY5Y, HeLa)
Negative control	β-tubulin is a cytoskeletal enzyme, so complete subcellular fractionation should be sufficient to provide a negative control. Due to its high expression, care should be taken to ensure that fractionation is complete without any cytoskeletal contamination.
Open data link	Please follow this link to OSF

Target information

Other names	Tubulin beta chain, Tubulin beta-5 chain, TUBB
UniProt ID	P07437
Gene name	TUBB
NCBI full gene name	tubulin beta class I
Entrez gene ID	203068
Amino acids	444 (49.7kDa)
Isoforms	β-tubulin has no isoforms other than the main sequence.
Expression	Expressed widely across all cell and tissue types including common cell lines.
Subcellular expression	Expressed in the cytoskeleton as a microtubule component.
Target function	β-tubulin forms dimers with α-tubulin to assemble into microtubules. The polymerisation and depolymerisation of tubulins drives microtubule dynamics within the cell. Microtubules are essential for cellular division, trafficking of vesicles, maintenance of cell shape and cell motility amongst other functions.
Processing	None
Post translational modifications	β-tubulin has phosphorylation sites on multiple residues alongside numerous gamma-glutamylaton sites.
Homology (compared to human)	Mouse and rat β-tubulin have a 98.4% and 93.2% identity to human β-tubulin as measured in a BLAST search
Similar proteins	No proteins (other than β-tubulin family members) show significant homology in a BLAST search

Storage & Handling

Storage instructions	-20 °C
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

References

Free intermingling of mammalian beta-tubulin isotypes among functionally distinct microtubules.

Lewis SA et al (1987) Cell 49

PubMedID [3552250](#)

Tubulin: Structure, Functions and Roles in Disease.

Binarová P et al (2019) Cells 8

PubMedID [31652491](#)

The structured core of human β tubulin confers isotype-specific polymerization properties.

Pamula MC et al (2016) The Journal of cell biology 213

PubMedID [27185835](#)

beta-tubulin is a more suitable internal control than beta-actin in western blot analysis of spinal cord tissues after traumatic injury.

Liu NK et al (2006) Journal of neurotrauma 23

PubMedID [17184189](#)