Recombinant TBB3 protein (His tag)

Catalog Number	538028
Synonyms	Tubulin beta-4 chain; Tubulin beta-III
Species	Human
Expression System	E. coli
Accession	Q13509
Molecular Weight	Predictes a molecular mass of 52.09 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 55 kDa band.

Product Information

Sequence Region	1-450
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>85%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 1-450 aa (Q13509) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human Tubulin beta-3 chain (TUBB3) fragment (amino acids 1-450) - a high-quality protein preparation ideal for studying microtubule dynamics, neuronal development, and axon guidance mechanisms. This stable, soluble fragment preserves key structural domains essential for functional analysis in cytoskeleton research. Tubulin beta-3 chain (TUBB3), also known as Tubulin beta-4 chain or Tubulin beta-III, is a crucial component of microtubules - protein filaments composed of alpha- and beta-tubulin heterodimers. As a major cytoskeletal element, microtubules undergo dynamic assembly and disassembly processes where GTP-tubulin dimers add to microtubule ends, forming stabilizing caps that transition to GDP-bound states through alpha-tubulin GTPase activity. TUBB3 plays a particularly critical role in neuronal development, mediating proper axon guidance and maintenance. The protein functions in growth cone dynamics and dorsal root ganglion axon projection toward the spinal cord. Notably, TUBB3 interacts with netrin-1 (NTN1) through its receptor UNC5C; netrin-1 binding triggers UNC5C dissociation from polymerized TUBB3, increasing microtubule dynamics and facilitating axon repulsion. The protein localizes primarily to the cytoplasm and cytoskeleton, with specific enrichment in neuronal projections including growth cones, lamellipodia, and filopodia, highlighting its importance in cellular morphology and neuronal pathfinding.