Recombinant TBCD protein (His tag)

Catalog Number	543503
Synonyms	Beta-tubulin cofactor D; tfcD; SSD-1; Tubulin-folding cofactor D
Species	Human
Expression System	E. coli
Accession	Q9BTW9
Molecular Weight	Predictes a molecular mass of 37.76 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 39 kDa band.

Product Information

Sequence Region	1-319
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>87%, 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 1-319 aa (Q9BTW9) 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-specific chaperone D (TBCD) fragment (residues 1-319) is a high-quality protein product designed for structural and biochemical studies. This stable and soluble fragment retains key functional properties, enabling researchers to investigate the critical role of TBCD in tubulin folding, microtubule dynamics, and mitotic spindle regulation. Tubulin-specific chaperone D (TBCD) is a tubulin-folding protein essential for the initial step of the tubulin folding pathway and tubulin complex assembly. It plays a crucial role in regulating microtubule polymerization and depolymerization by capturing GTP-bound beta-tubulin, thereby modulating microtubule dynamics. TBCD functions as a GTPase-activating protein for ARL2, and its interaction with ARL2 regulates its ability to bind beta-tubulin. In the absence of ARL2, TBCD disrupts microtubules and promotes beta-tubulin degradation. It is involved in epithelial cell detachment, tight junction disassembly, and is required for proper mitotic spindle assembly and progression through mitosis. Additionally, TBCD contributes to neuron morphogenesis. Subcellularly, it localizes to tight junctions, adherens junctions, the lateral cell membrane, cytoplasm, and centrosomes, highlighting its diverse roles in cellular structure and function.