Recombinant TTLL3 protein (His tag)

Catalog Number	548589
Synonyms	HOTTL; Tubulin--tyrosine ligase-like protein 3
Species	Human
Expression System	E. coli
Accession	Q9Y4R7
Molecular Weight	Predictes a molecular mass of 49.49 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 52 kDa band.

Product Information

Sequence Region	108-523
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>88%, 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 108-523 aa (Q9Y4R7) 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 Tubulin monoglycylase TTLL3 (EC 6.3.2.-) fragment (residues 108-523) from Homo sapiens, encompassing the full TTL domain. This high-purity protein is an essential tool for investigating tubulin glycylation mechanisms, cilia stability, and cellular processes linked to cancer and fertility. TTLL3 is a monoglycylase enzyme that modifies alpha- and beta-tubulin by adding a single glycine to specific glutamate residues within the C-terminal tubulin tails, generating monoglycine side chains. It preferentially glycylates beta-tubulin but shifts toward alpha-tubulin as beta-tubulin glutamylation increases, competing with polyglutamylases to create an anticorrelation between glycylation and glutamylation. TTLL3, in conjunction with TTLL8, mediates microtubule glycylation in primary and motile cilia, which is critical for their stability and maintenance. It plays a key role in colon cancer development by regulating cell proliferation through glycylation of primary cilia in colon epithelial cells. Additionally, TTLL3 glycylates sperm flagella, controlling axonemal dynein motor activity, flagellar beat patterns, directional sperm swimming, and male fertility. The protein localizes to the cytoplasm, cytoskeleton, and specific structures such as cilium and flagellum axonemes, underscoring its importance in microtubule function and cellular dynamics.