Recombinant TTC5 protein (His tag)

Catalog Number	547714
Synonyms	TPR repeat protein 5; Stress-responsive activator of p300; Protein Strap
Species	Human
Expression System	E. coli
Accession	Q8N0Z6
Molecular Weight	Predictes a molecular mass of 50.59 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 52 kDa band.

Product Information

Sequence Region	1-440
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 1-440 aa (Q8N0Z6) 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 Tetratricopeptide Repeat Protein 5 (TPR repeat protein 5), encompassing amino acids 1-440, is a high-purity fragment designed for structural and biochemical studies. This stable and soluble unit retains key functional regions, enabling researchers to investigate its roles in cellular stress responses, actin regulation, autophagy, and DNA repair mechanisms. Tetratricopeptide Repeat Protein 5 (TTC5), also known as Stress-responsive activator of p300 or Strap, is a multifunctional cofactor involved in critical cellular processes. Under non-stress conditions, it localizes to the cytoplasm and negatively regulates nutrient stress-induced autophagy by inhibiting JMY's interaction with MAP1LC3B, preventing autophagosome formation. It also promotes tubulin degradation in response to excess soluble tubulin by associating with ribosomes during nascent tubulin translation. Following DNA damage, TTC5 is phosphorylated by ATM and CHEK2, leading to nuclear accumulation where it stabilizes p53/TP53, recruits coactivators like JMY and p300 to enhance transcription and apoptosis, and prevents p53 degradation by MDM2. Additionally, it recruits PRMT5 to methylate p53. During heat-shock stress, TTC5 forms a complex with HSF1 and p300 to stimulate heat-shock-responsive transcription, promoting cell survival. Mitochondrially localized TTC5 interacts with ATP synthase subunit beta to reduce ATP production, regulating cellular respiration and apoptosis. The protein dynamically localizes to the nucleus, cytoplasm, cytoplasmic vesicles, and mitochondrion matrix, with phosphorylation at Ser-203 governing nuclear translocation, particularly under DNA damage conditions.