Recombinant CDKAL protein (His tag)

Catalog Number	545172
Synonyms	CDK5 regulatory subunit-associated protein 1-like 1; tRNA-t(6)A37 methylthiotransferase
Species	Human
Expression System	E. coli
Accession	Q5VV42
Molecular Weight	Predictes a molecular mass of 52.96 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 54 kDa band.

Product Information

Sequence Region	60-514
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 60-514 aa (Q5VV42) 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	This recombinant protein product features a 455-amino acid fragment (residues 60-514) of human Threonylcarbamoyladenosine tRNA methylthiotransferase (CDKAL1), encompassing the complete MTTase N-terminal, Radical SAM core, and TRAM functional domains. This carefully designed fragment serves as an essential tool for researchers investigating tRNA modification mechanisms and methylthiotransferase activity. The full-length Threonylcarbamoyladenosine tRNA methylthiotransferase (CDKAL1) catalyzes the methylthiolation of N6-threonylcarbamoyladenosine (t(6)A) to form 2-methylthio-N6-threonylcarbamoyladenosine (ms(2)t(6)A) at position 37 in tRNAs that read codons beginning with adenine. This post-transcriptional modification is crucial for proper tRNA function and translational accuracy. The enzyme is localized to the endoplasmic reticulum membrane as a single-pass membrane protein and functions as a tail-anchored protein that utilizes the TCR40 pathway for insertion into the endoplasmic reticulum membrane, highlighting its importance in cellular protein synthesis machinery.