Recombinant CMPK2 protein (His tag)

Catalog Number	542814
Synonyms	Nucleoside-diphosphate kinase
Species	Human
Expression System	E. coli
Accession	Q5EBM0
Molecular Weight	Predictes a molecular mass of 40.85 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 42 kDa band.

Product Information

Sequence Region	99-449
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>86%, 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 99-449 aa (Q5EBM0) 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 UMP-CMP kinase 2, mitochondrial (CMPK2) fragment (residues 99-449) from Homo sapiens, a key enzyme involved in mitochondrial nucleotide salvage and antiviral defense. This fragment is engineered for stability and solubility, ideal for structural studies and functional assays. UMP-CMP kinase 2 (CMPK2) is a mitochondrial nucleotide monophosphate kinase essential for salvage synthesis of deoxyribonucleotides, supporting mitochondrial DNA replication. It exhibits dual immunomodulatory and antiviral activities through both interferon-dependent and independent pathways, restricting replication of viruses such as flaviviruses and coronaviruses. The protein phosphorylates pyrimidine nucleoside monophosphates, including dUMP and dCMP, with highest efficacy for dUMP. Its mitochondrial localization is critical for antiviral function, and it collaborates with viperin/RSAD2 and ddhCTP to inhibit viral RNA-dependent RNA polymerases. Additionally, CMPK2-generated mitochondrial DNA fragments contribute to NLRP3 inflammasome activation. The recombinant fragment (residues 99-449) encompasses a stable domain suitable for investigating these mechanisms.