Recombinant DGUOK protein (His tag)

Catalog Number	540388
Synonyms	Deoxyadenosine kinase, mitochondrial
Species	Human
Expression System	E. coli
Accession	Q16854
Molecular Weight	Predictes a molecular mass of 29.62 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 30 kDa band.

Product Information

Sequence Region	40-277
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 40-277 aa (Q16854) 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 Deoxyguanosine Kinase, Mitochondrial (DGUOK) Fragment (aa 40-277) is a high-purity, stable protein fragment ideal for structural studies, enzymatic assays, and drug discovery research. This fragment encompasses the key functional domain, offering excellent solubility and activity for investigating mitochondrial nucleotide metabolism and nucleoside analog phosphorylation. Deoxyguanosine kinase, mitochondrial (DGUOK) is a crucial enzyme encoded by the DGUOK gene in humans that phosphorylates deoxyguanosine and deoxyadenosine within the mitochondrial matrix, with highest efficiency for deoxyguanosine. This enzyme plays a vital role in mitochondrial DNA synthesis, particularly in non-replicating cells where cytosolic dNTP synthesis is down-regulated, making DGUOK essential for maintaining mtDNA integrity alongside TK2. The protein also phosphorylates certain nucleoside analogs, establishing it as an important target for antiviral and chemotherapeutic agents. DGUOK is localized exclusively to the mitochondrion, where it contributes to the mitochondrial nucleotide salvage pathway. Mutations in DGUOK are associated with mitochondrial DNA depletion syndromes, highlighting its clinical significance in mitochondrial disorders.