Recombinant DPOG2 protein (His tag)

Catalog Number	548470
Synonyms	DNA polymerase gamma accessory 55 kDa subunit; p55; Mitochondrial DNA polymerase accessory subunit; MtPolB; PolG-beta
Species	Human
Expression System	E. coli
Accession	Q9UHN1
Molecular Weight	Predictes a molecular mass of 49.85 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 50 kDa band.

Product Information

Sequence Region	65-485
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>90%, 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 65-485 aa (Q9UHN1) 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 represents a stable fragment (amino acids 65-485) of human DNA polymerase subunit gamma-2 (POLG2), the essential accessory subunit of mitochondrial DNA polymerase. This carefully selected fragment maintains structural integrity and solubility, making it ideal for investigating mitochondrial DNA replication mechanisms and polymerase regulation. DNA polymerase subunit gamma-2 serves as the critical accessory component of DNA polymerase gamma, the sole enzyme responsible for mitochondrial DNA replication in human cells. This protein functions as an allosteric regulator that enhances the polymerase activity and processivity of the catalytic subunit while suppressing exonucleolytic proofreading activity, particularly on homopolymeric templates with mismatched termini. The protein localizes to the mitochondrial matrix and nucleoid, where it binds single-stranded DNA and plays a vital role in maintaining mitochondrial genome integrity. Its regulatory functions have been extensively characterized through multiple studies, establishing its importance in mitochondrial DNA maintenance and replication fidelity.