Recombinant NUCG protein (His tag)

Catalog Number	542669
Synonyms	Endo G
Species	Human
Expression System	E. coli
Accession	Q14249
Molecular Weight	Predictes a molecular mass of 28.09 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 28 kDa band.

Product Information

Sequence Region	63-297
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 63-297 aa (Q14249) 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 Endonuclease G, mitochondrial (Endo G) fragment (residues 63-297) from Homo sapiens, a stable and soluble unit ideal for structural and biochemical studies of its role in DNA cleavage, recombination, and autophagy regulation. Endonuclease G (Endo G), encoded by the ENDOG gene in humans, is a mitochondrial enzyme that preferentially cleaves double-stranded DNA modified with 5-hydroxymethylcytosine (5hmC), enhancing recombination efficiency and specifying cleavage sites. It exhibits high affinity for Holliday junctions and promotes conservative recombination in 5hmC-modified DNA. Additionally, Endo G supports autophagy initiation by suppressing mTOR through phosphorylation-dependent interaction with YWHAG and endonuclease-mediated DNA damage responses. Under oxidative or nitrosative stress, it facilitates mtDNA cleavage, triggering compensatory mtDNA replication. The protein is localized to the mitochondrion, underscoring its role in mitochondrial DNA maintenance and cellular stress responses.