# Recombinant CLPP protein (His tag)

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| **Catalog Number** | 542759 |
| **Synonyms** | Caseinolytic mitochondrial matrix peptidase proteolytic subunit; Endopeptidase Clp |
| **Species** | Human |
| **Expression System** | E. coli |
| **Accession** | Q16740 |
| **Molecular Weight** | Predictes a molecular mass of 25.82 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 26 kDa band. |

## Product Information

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| **Sequence Region** | 57-277 |
| **Form** | Lyophilized powder |
| **Formulation** | Lyophilized from sterile PBS, pH 7.4 |
| **Purity** | >85%, 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 57-277 aa (Q16740) were fused with 6His tag. |

## Storage & Handling

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| **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.<br>Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise. |

## Description

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| **Description** | This recombinant protein product features a stable and soluble fragment (residues 57-277) of the human ATP-dependent Clp protease proteolytic subunit (CLPP), designed for structural and biochemical studies. This fragment represents a key functional domain of the mitochondrial protease, enabling researchers to investigate its role in ATP-dependent proteolysis and mitochondrial quality control.<br>The full-length ATP-dependent Clp protease proteolytic subunit (CLPP) is a mitochondrial matrix enzyme that functions as the proteolytic component of the ClpXP complex. This complex cleaves peptides and various proteins in an ATP-dependent process, with CLPP exhibiting low peptidase activity independently but enhanced function when complexed with CLPX. The ClpXP complex degrades casein subunits (CSN1S1, CSN2, CSN3) and synthetic peptides in vitro, suggesting a broad housekeeping role in protein degradation rather than substrate specificity. Notably, CLPP cleaves PINK1 within mitochondria, implicating it in mitochondrial quality control pathways. As a resident of the mitochondrial matrix, CLPP performs essential proteolytic functions critical for mitochondrial maintenance and cellular homeostasis. |