# Recombinant CDK7 protein (His tag)

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| **Catalog Number** | 540013 |
| **Synonyms** | 39 kDa protein kinase; p39 Mo15; CDK-activating kinase 1; Cell division protein kinase 7; Serine/threonine-protein kinase 1; TFIIH basal transcription factor complex kinase subunit |
| **Species** | Human |
| **Expression System** | E. coli |
| **Accession** | P50613 |
| **Molecular Weight** | Predictes a molecular mass of 36.67 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 37 kDa band. |

## Product Information

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| **Sequence Region** | 2-311 |
| **Form** | Lyophilized powder |
| **Formulation** | Lyophilized from sterile PBS, pH 7.4 |
| **Purity** | >88%, 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 2-311 aa (P50613) 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** | Recombinant human Cyclin-dependent kinase 7 (CDK7) fragment (residues 2-311) is a high-purity protein encompassing the complete protein kinase domain. This fragment serves as an essential tool for investigating CDK7's dual roles in cell cycle regulation and transcriptional control, enabling targeted studies of kinase activity and molecular interactions.<br>Cyclin-dependent kinase 7 (CDK7) is a critical serine/threonine kinase in human cells that functions in both cell cycle progression and RNA polymerase II-mediated transcription. As the catalytic subunit of the CDK-activating kinase (CAK) complex, CDK7 activates key cell cycle regulators including CDK1, CDK2, CDK4, and CDK6 through threonine phosphorylation. Additionally, within the TFIIH transcription factor complex, CDK7 initiates transcription by phosphorylating the C-terminal domain of RNA polymerase II at Ser-5 residues. The protein demonstrates nuclear and cytoplasmic localization, with dynamic subcellular redistribution in response to DNA damage and DNA-bound peptides. CDK7 also participates in cellular stress responses through p53/TP53 phosphorylation and feedback regulation, positioning it as a crucial node in cell cycle control, transcriptional mechanisms, and DNA damage response pathways. |