# Recombinant CHK2 protein (His tag)

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| **Catalog Number** | 544256 |
| **Synonyms** | CHK2 checkpoint homolog; Cds1 homolog; Hucds1; hCds1; Checkpoint kinase 2 |
| **Species** | Human |
| **Expression System** | E. coli |
| **Accession** | O96017 |
| **Molecular Weight** | Predictes a molecular mass of 49.42 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 52 kDa band. |

## Product Information

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| **Sequence Region** | 89-505 |
| **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 89-505 aa (O96017) 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 Serine/threonine-protein kinase Chk2 (CHEK2) fragment (residues 89-505) is a high-purity protein encompassing the complete FHA and Protein kinase domains. This product is an essential tool for investigating DNA damage response mechanisms, including checkpoint signaling, DNA repair regulation, and apoptosis pathways, providing researchers with a functional domain-specific reagent for kinase assays and interaction studies.<br>Serine/threonine-protein kinase Chk2 (CHEK2) is a critical tumor suppressor and key regulator of DNA damage response in human cells. Upon activation by DNA double-strand breaks, Chk2 orchestrates checkpoint-mediated cell cycle arrest through phosphorylation of CDC25 phosphatases, promotes DNA repair via BRCA2 and FOXM1 phosphorylation, and regulates apoptosis through p53/TP53, MDM4, and E2F1 modulation. The protein also functions in mitotic spindle assembly and autophagy regulation under oxidative stress. Chk2 primarily localizes to the nucleus, particularly within PML bodies and nucleoplasm, where it interacts with TP53. Its multifaceted roles in maintaining genomic stability make it a crucial protein for cancer research and DNA damage response studies. |