

## CHEK2 Protein, Human (sf9, GST)

Cat. No.:	HY-P75349
Synonyms:	Serine/threonine-protein kinase Chk2; Hucds1; Checkpoint kinase 2; CDS1; CHK2; RAD53
Species:	Human
Source:	Sf9 insect cells
Accession:	O96017-1 (S2-L543)
Gene ID:	11200
Molecular Weight:	

### PROPERTIES

Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Solution
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconstitution	N/A.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice

### DESCRIPTION

Background	<p>The CHEK2 protein is a serine/threonine-protein kinase that plays a crucial role in checkpoint-mediated cell cycle arrest, DNA repair activation, and apoptosis in response to DNA double-strand breaks. It also plays a role in negatively regulating cell cycle progression during normal cell cycles. Upon activation, CHEK2 phosphorylates various effectors at a specific consensus sequence, inhibiting the activity of CDC25A, CDC25B, and CDC25C. This inhibition of CDC25 phosphatase activity leads to increased inhibitory tyrosine phosphorylation of CDK-cyclin complexes, preventing cell cycle progression. CHEK2 also phosphorylates NEK6, involved in G2/M cell cycle arrest, and BRCA2, enhancing the association of RAD51 with chromatin for DNA repair through homologous recombination. Furthermore, CHEK2 stimulates the transcription of DNA repair genes, including BRCA2, by phosphorylating and activating the transcription factor FOXM1. In terms of apoptosis, CHEK2 phosphorylates p53/TP53, MDM4, and PML, leading to the accumulation of active p53/TP53 and reduced degradation of p53/TP53. It also phosphorylates the transcription factor E2F1 to control the transcription of pro-apoptotic genes. Additionally, CHEK2 has a role in mitotic spindle assembly by phosphorylating BRCA1, independent of DNA damage. Its absence may contribute to the chromosomal instability observed in certain cancer cells. CHEK2 also plays a role in microbial infection by phosphorylating the herpes simplex virus 1/HHV-1 protein ICP0 to activate its SUMO-targeted ubiquitin ligase activity.</p>
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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