

CHEK2 Protein, Mouse (sf9, His-GST)

Cat. No.:	HY-P75348
Synonyms:	Serine/threonine-protein kinase Chk2; Hucds1; Checkpoint kinase 2; CDS1; CHK2; RAD53
Species:	Mouse
Source:	Sf9 insect cells
Accession:	Q9Z265 (M1-L546)
Gene ID:	50883
Molecular Weight:	Approximately 90 kDa

PROPERTIES

Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Solution.
Formulation	Supplied as a 0.2 µm filtered solution of 20 mM Tris, 500 mM NaCl, pH 8.0.
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

CHEK2, a serine/threonine-protein kinase, stands as a crucial orchestrator of cellular responses to DNA double-strand breaks, contributing to checkpoint-mediated cell cycle arrest, DNA repair activation, and apoptosis. Upon activation, CHEK2 phosphorylates a myriad of effectors, particularly at the consensus sequence [L-X-R-X-X-S/T]. Its regulatory role extends to cell cycle checkpoint arrest, achieved through the inhibition of CDC25A, CDC25B, and CDC25C, leading to enhanced inhibitory tyrosine phosphorylation of CDK-cyclin complexes and impeding cell cycle progression. Furthermore, CHEK2 impacts DNA repair processes by phosphorylating BRCA2, facilitating the association of RAD51 with chromatin and promoting homologous recombination. Its influence on apoptosis is evident through the phosphorylation of key proteins, including p53/TP53, MDM4, and PML. CHEK2's tumor suppressor function is highlighted by its involvement in transcriptional regulation of pro-apoptotic genes and its potential role in mitotic spindle assembly by phosphorylating BRCA1. Notably, CHEK2's absence may contribute to chromosomal instability observed in certain cancer cells, emphasizing its multifaceted role in maintaining genomic integrity.

Caution: Product has not been fully validated for medical applications. For research use only.

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