

Recombinant Human CHEK2 Protein (S2-L543), GST tagged

Cat. No. CHEK2-1189H Lot. No. (See product label)

SPECIFICATION

Product Overview Recombinant Human GST-TEV-GG-CHEK2(S2-L543 end) Protein was expressed in Insect cell.

Species Human

Source Insect Cells

ProteinLength S2-L543

Description Serine/threonine-protein kinase which is required for checkpoint-mediated cell cycle arrest, activation of DNA repair and apoptosis in response to the presence of DNA double-strand breaks. May also negatively regulate cell cycle progression during unperturbed cell cycles. Following activation, phosphorylates numerous effectors preferentially at the consensus sequence [L-X-R-X-X-S/T]. Regulates cell cycle checkpoint arrest through phosphorylation of CDC25A, CDC25B and CDC25C, inhibiting their activity. Inhibition of CDC25 phosphatase activity leads to increased inhibitory tyrosine phosphorylation of CDK-cyclin complexes and blocks cell cycle progression. May also phosphorylate NEK6 which is involved in G2/M cell cycle arrest. Regulates DNA repair through phosphorylation of BRCA2, enhancing the association of RAD51 with chromatin which promotes DNA repair by homologous recombination. Also stimulates the transcription of genes involved in DNA repair (including BRCA2) through the phosphorylation and activation of the transcription factor FOXM1. Regulates apoptosis through the phosphorylation of p53/TP53, MDM4 and PML. Phosphorylation of p53/TP53 at 'Ser-20' by CHEK2 may alleviate inhibition

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by MDM2, leading to accumulation of active p53/TP53. Phosphorylation of MDM4 may also reduce degradation of p53/TP53. Also controls the transcription of pro-apoptotic genes through phosphorylation of the transcription factor E2F1. Tumor suppressor, it may also have a DNA damage-independent function in mitotic spindle assembly by phosphorylating BRCA1. Its absence may be a cause of the chromosomal instability observed in some cancer cells. Promotes the CCAR2-SIRT1 association and is required for CCAR2-mediated SIRT1 inhibition.

Form	Liquid
Endotoxin	< 0.01 EU per µg of the protein
Purity	90%
Stability	Samples are stable for up to twelve months from date of receipt at -20 to -80 centigrade.
Storage	Store it under sterile conditions at -20 to -80 centigrade. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Storage Buffer	Supplied as sterile 50 mM Tris-HCl (pH7.5), 200 mM NaCl, 20% glycerol
Shipping	It is shipped out with blue ice.

GENE INFORMATION

Gene Name	CHEK2 checkpoint kinase 2 [Homo sapiens (human)]
Official Symbol	CHEK2
Synonyms	CHEK2; checkpoint kinase 2; CHK2 (checkpoint, S.pombe) homolog, CHK2

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checkpoint homolog (S. pombe), RAD53; serine/threonine-protein kinase Chk2; bA444G7; CDS1; CHK2; HuCds1; PP1425; cds1 homolog; CHK2 checkpoint homolog; checkpoint-like protein CHK2; LFS2; RAD53; hCds1;

Gene ID 11200

mRNA Refseq NM_001005735

Protein Refseq NP_001005735

UniProt ID O96017

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