Human CHK2/CHEK2 Protein (GST Tag)

Catalog Number: **11414-H09B**

General Information

Gene Name Synonym:

CDS1; CHK2; hCds1; HuCds1; LFS2; PP1425; RAD53

Protein Construction:

A DNA sequence encoding the human CHEK2 (NP_009125.1) (Met1-Leu543) was expressed with a GST tag at the N-terminus.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE.

Endotoxin:

< 1.0 EU per μg protein as determined by the LAL method.

Stability:

Samples are stable for up to twelve months from date of receipt at -70 ℃

Predicted N terminal: Met

Molecular Mass:

The recombinant human CHEK2 consists of 777 amino acids and predicts a molecular mass of 88.1 kDa.

Formulation:

Lyophilized from sterile 50 mM Tris, 150 mM NaCl, 25 %glycerol, pH 7.5, 0.1 mM EDTA, 0.5 mM TCEP.

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

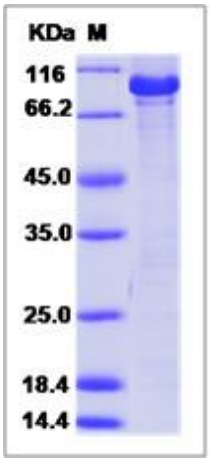
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

In response to DNA damage and replication blocks, cell cycle progression is halted through the control of critical cell cycle regulators. The protein encoded by CHEK2 gene is a cell cycle checkpoint regulator and putative tumor suppressor. It contains a forkhead-associated protein interaction domain essential for activation in response to DNA damage and is rapidly phosphorylated in response to replication blocks and DNA damage. When activated, the encoded CHEK2 protein is known to inhibit CDC25C phosphatase, preventing entry into mitosis, and has been shown to stabilize the tumor suppressor protein p53, leading to cell cycle arrest in G1. In addition, this protein interacts with and phosphorylates BRCA1, allowing BRCA1 to restore survival after DNA damage. Mutations in this gene have been linked with Li-Fraumeni syndrome, a highly penetrant familial cancer phenotype usually associated with inherited mutations in TP53. Also, mutations in CHEK2s gene are thought to confer a predisposition to sarcomas, breast cancer, and brain tumors. This nuclear protein is a member of the CDS1 subfamily of serine/threonine protein kinases. Several transcript variants encoding different isoforms have been found for this gene.

References

1.Bogdanova N, *et al.* (2005) Association of two mutations in the CHEK2 gene with breast cancer. Cancer Genetics. 116(2) : 263-6. 2.Dong XY, *et al.* (2003) Mutations in CHEK2 associated with prostate cancer risk. The American journal of human genetics. 72(2) 270-80. 3.Massink MPG, Kooi IE, Martens JWM, Waisfisz Q, Meijers-Heijboer H. Genomic profiling of CHEK2*1100delC-mutated breast carcinomas. BMC Cancer. 2015;15:877. doi:10.1186/s12885-015-1880-y.