

Human CHK1 / CHEK1 Protein (GST Tag)

Catalog Number: 10539-H09B



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

CHK1

Protein Construction:

A DNA sequence encoding the human CHK1 (AAM78553.1) (Met1-Thr476) was fused with the GST tag at the N-terminus.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 85 % as determined by SDS-PAGE

Bio Activity:

The specific activity was determined to be > 15 nmol/min/mg using CHKtide peptide (KKKVSRSGLYRSPMPENLNRPR) as substrate.

Endotoxin:

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

Stability:

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

Predicted N terminal: Met

Molecular Mass:

The recombinant human CHK1/GST chimera consists of 700 amino acids and predicts a molecular mass of 80.7kDa. It migrates as an approximately 80 kDa band as predicted in SDS-PAGE under reducing conditions.

Formulation:

Supplied as sterile 20mM Tris, 500mM NaCl, pH 7.4, 10% glycerol, 2mM GSH

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:

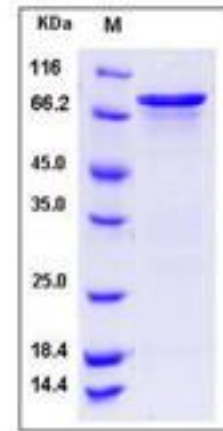
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

CHK1 / CHEK1 contains 1 protein kinase domain and belongs to the protein kinase superfamily, CAMK Ser/Thr protein kinase family, NIM1 subfamily. It is a member of checkpoint kinases (Chks). Chks Checkpoint kinases (Chks) are serine/threonine kinases that are involved in the control of the cell cycle. There are two subtypes of chks that have so far been identified, CHK1 / CHEK1 and Chk2. They are essential components to delay cell cycle progression in normal and damaged cells and can act at all three cell cycle checkpoints. Chks are activated by phosphorylation. ATR kinase phosphorylates CHK1 / CHEK1 in response to single strand DNA breaks and ATM kinase phosphorylates Chk2 in response to double strand breaks. Chks phosphorylate Cdc25 phosphatase at Ser216, which leads to Cdc25 sequestration in the cytoplasm. Chks have a role in the physiological stress of hypoxia/reoxygenation. CHK1 / CHEK1 is required for checkpoint mediated cell cycle arrest in response to DNA damage or the presence of unreplicated DNA. CHK1 / CHEK1 may also negatively regulate cell cycle progression during unperturbed cell cycles.

References

- 1.Chen P, *et al.* (2000) The 1.7 Å crystal structure of human cell cycle checkpoint kinase CHK1 / CHEK1: Implications for CHK1 / CHEK1 regulation. *Cell*. 100 (6): 681-92.
- 2.Sanchez Y, *et al.* (1997) Conservation of the CHK1 / CHEK1 checkpoint pathway in mammals: linkage of DNA damage to Cdk regulation through Cdc25. *Science*. 277 (5331): 1497-501.
- 3.Flaggs G, *et al.* (1998) Atm-dependent interactions of a mammalian CHK1 / CHEK1 homolog with meiotic chromosomes. *Curr Biol*. 7 (12): 977-86.

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