
Summary

Production Name	Chk1 Rabbit Polyclonal Antibody
Description	Rabbit Polyclonal Antibody
Host	Rabbit
Application	IHC,WB,ELISA
Reactivity	Human,Mouse,Rat

Performance

Conjugation	Unconjugated
Modification	Unmodified
Isotype	IgG
Clonality	Polyclonal
Form	Liquid
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.
Buffer	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% New type preservative N.
Purification	Affinity purification

Immunogen

Gene Name	CHEK1
Alternative Names	CHEK1; CHK1; Serine/threonine-protein kinase Chk1; CHK1 checkpoint homolog; Cell cycle checkpoint kinase; Checkpoint kinase-1
Gene ID	1111.0
SwissProt ID	O14757.The antiserum was produced against synthesized peptide derived from human Chk1. AA range:286-335

Application

Dilution Ratio	WB 1:500 - 1:2000. IHC 1:100 - 1:300. . ELISA: 1:10000. Not yet tested in other applications.
Molecular Weight	54kD

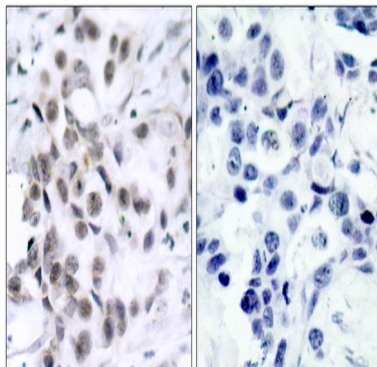
Background

The protein encoded by this gene belongs to the Ser/Thr protein kinase family. It is required for checkpoint mediated cell cycle arrest in response to DNA damage or the presence of unreplicated DNA. This protein acts to integrate signals from ATM and ATR, two cell cycle proteins involved in DNA damage responses, that also associate with chromatin in meiotic prophase I. Phosphorylation of CDC25A protein phosphatase by this protein is required for cells to delay cell cycle progression in response to double-strand DNA breaks. Several alternatively spliced transcript variants have been found for this gene. [provided by RefSeq, Oct 2011],catalytic activity:ATP + a protein = ADP + a phosphoprotein.,domain:The autoinhibitory region (AIR) inhibits the activity of the kinase domain.,function:Required for checkpoint mediated cell cycle arrest in response to DNA damage or the presence of unreplicated DNA. May also negatively regulate cell cycle progression during unperturbed cell cycles. Recognizes the substrate consensus sequence [R-X-X-S/T]. Binds to and phosphorylates CDC25A, CDC25B and CDC25C. Phosphorylation of CDC25A at 'Ser-178' and 'Thr-507' and phosphorylation of CDC25C at 'Ser-216' creates binding sites for 14-3-3 proteins which inhibit CDC25A and CDC25C. Phosphorylation of CDC25A at 'Ser-76', 'Ser-124', 'Ser-178', 'Ser-279' and 'Ser-293' promotes proteolysis of CDC25A. Inhibition of CDC25 activity leads to increased inhibitory tyrosine phosphorylation of CDK-cyclin complexes and blocks cell cycle progression. Binds to and phosphorylates RAD51 at 'Thr-309', which may enhance the association of RAD51 with chromatin and promote DNA repair by homologous recombination. Binds to and phosphorylates TLK1 at 'Ser-743', which prevents the TLK1-dependent phosphorylation of the chromatin assembly factor ASF1A. This may affect chromatin assembly during S phase or DNA repair. May also phosphorylate multiple sites within the C-terminus of TP53, which promotes activation of TP53 by acetylation and enhances suppression of cellular proliferation.,PTM:Phosphorylated by ATR in a RAD17-dependent manner in response to ultraviolet irradiation and inhibition of DNA replication. Phosphorylated by ATM in response to ionizing irradiation. ATM and ATR can both phosphorylate Ser-317 and Ser-345 and this results in enhanced kinase activity. Phosphorylation at Ser-345 also increases binding to 14-3-3 proteins and promotes nuclear retention. Conversely, dephosphorylation at Ser-345 by PPM1D may contribute to exit from checkpoint mediated cell cycle arrest. May also be phosphorylated at Ser-280 by AKT1/PKB, which may promote mono and/or diubiquitination. Also phosphorylated at undefined residues during mitotic arrest, which results in decreased activity.,PTM:Ubiquitinated. Mono or diubiquitination promotes nuclear exclusion.,similarity:Belongs to the protein kinase superfamily. CAMK Ser/Thr protein kinase family. NIM1 subfamily.,similarity:Contains 1 protein kinase domain.,subcellular location:Nuclear export is mediated at least in part by XPO1/CRM1. Also localizes to the centrosome specifically during interphase, where it may protect centrosomal CDC2 kinase from inappropriate activation by cytoplasmic CDC25B.,subunit:Interacts with BRCA1, CLSPN, PPM1D, RAD51, TIMELESS, XPO1/CRM1 and YWHAZ/14-3-3 zeta.,tissue specificity:Expressed ubiquitously with the most abundant expression in thymus, testis, small intestine and colon.,

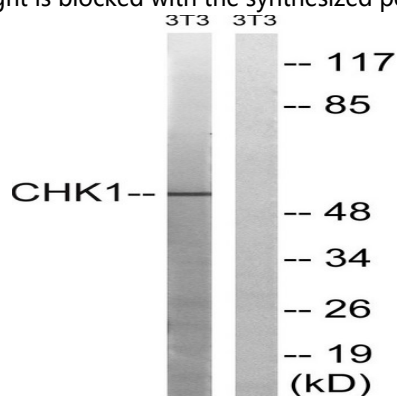
Research Area

Cell_Cycle_G1S;Cell_Cycle_G2M_DNA;p53;

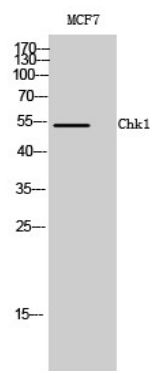
Image Data



Immunohistochemistry analysis of paraffin-embedded human breast carcinoma tissue, using Chk1 Antibody. The picture on the right is blocked with the synthesized peptide.



Western blot analysis of lysates from NIH/3T3 cells, using Chk1 Antibody. The lane on the right is blocked with the synthesized peptide.



Western Blot analysis of MCF7 cells using Chk1 Polyclonal Antibody

Note

For research use only.