



Chk1 Rabbit mAb

Catalog No	YP-rAb-17707
Isotype	IgG
Reactivity	Human,Mouse,Rat
Applications	WB,IF,IP,ELISA
Gene Name	CHEK1
Protein Name	Serine/threonine-protein kinase Chk1
Purification Process	Protein A
Specificity	Endogenous
Formulation	PBS, 50% glycerol, 0.05% Proclin 300, 0.05%BSA
Source	Monoclonal, Rabbit,IgG
Dilution	WB 1:2000-1:10000; IF 1:200-1:1000; ELISA 1:5000-1:20000; IP 1:50-1:200;
Concentration	0.5 mg/ml
Purity	≥90%
Storage Stability	-15 ° C to -25 ° C/1 year(Do not lower than -25 ° C)
Synonyms	Chk1;Serine/threonine-protein kinase Chk1;CHEK1 ; CHK1 ; Serine/threonine-protein kinase Chk1 ; CHK1 checkpoint homolog ; Cell cycle checkpoint kinase ; Checkpoint kinase-1;CHEK1
Observed Band	54kD
Calculated Molecular Weight	54kD
Cell Pathway	Nucleus
Tissue Specificity	Expressed ubiquitously with the most abundant expression in thymus, testis, small intestine and colon.
Function	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.

Background

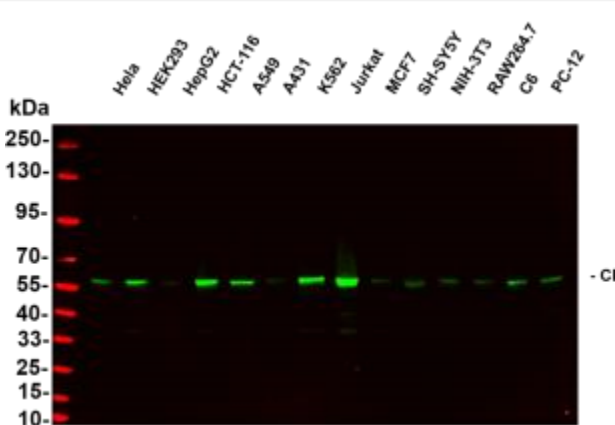
The protein encoded by this gene belongs to the Ser/Thr protein kinase family. It is required for checkpoint mediated cell cycle arrest in response to DNA damage or the presence of unreplicated DNA. This protein acts to integrate signals from ATM and ATR, two cell cycle proteins involved in DNA damage 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],

matters needing attention

Avoid repeated freezing and thawing!

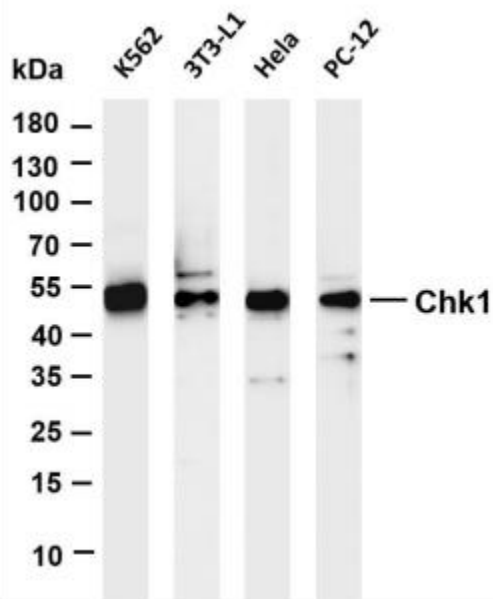
Usage suggestions

This product can be used in immunological reaction related experiments. For more information, please consult technical personnel.

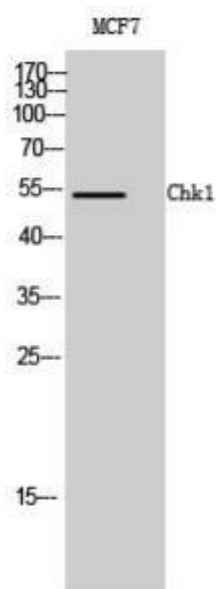


Various whole cell lysates were separated by 4-20% SDS-PAGE, and the primary antibody was used at 4~C, over night with a 1:5000 dilution. The Dylight 800-conjugated Goat anti-Rabbit antibody



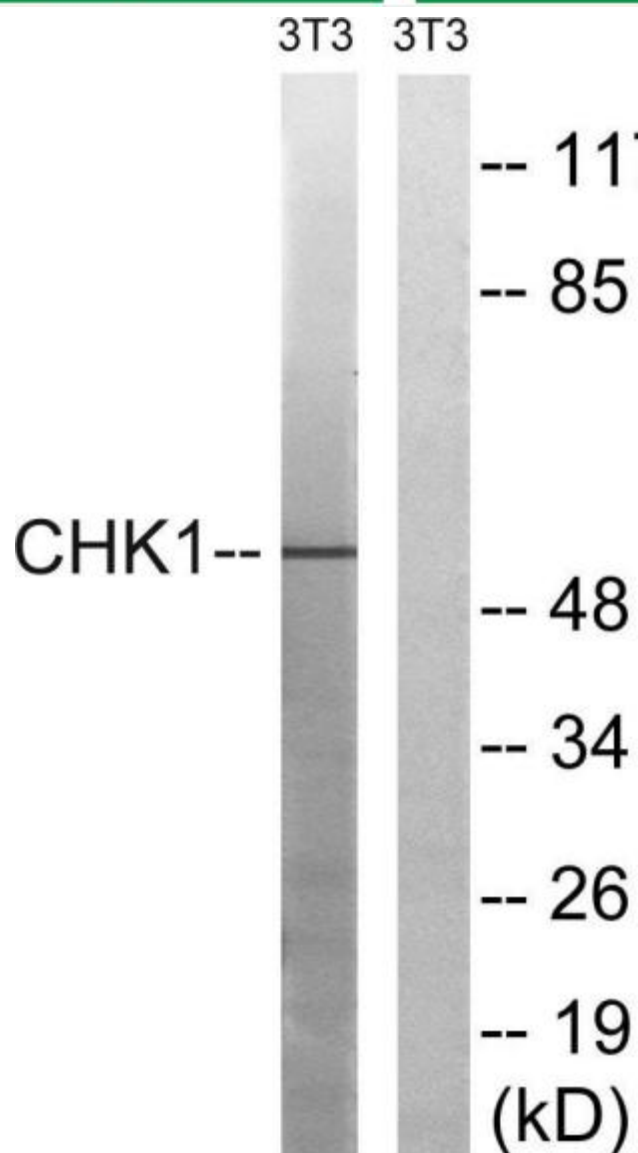


Various whole cell lysates were separated by 4-20% SDS-PAGE, and the membrane was blotted with anti-Chk1 antibody. The HRP-conjugated Goat anti-Rabbit IgG(H + L) antibody was used to detect the antibody. Lane 1: K562 Lane 2: 3T3-L1 Lane 3: HeLa Lane 4: PC-12 Predicted band size: 54kDa Observed band size: 54kDa



Western Blot analysis of MCF7 cells using Chk1 Antibody





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

