

Chk1 (Phospho Ser301) Rabbit pAb

CatalogNo: YP0546

Key Features

Host Species

- Rabbit

Reactivity

- Human, Mouse, Rat

Applications

- WB, IF, ELISA

MW

- 55kD (Observed)

Isotype

- IgG

Storage

Storage* -15°C to -25°C/1 year (Do not lower than -25°C)

Formulation Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

Recommended Dilution Ratios

WB 1:500-1:2000

IF 1:200-1:1000

ELISA 1:40000

Not yet tested in other applications.

Basic Information

Clonality Polyclonal

Immunogen Information

Immunogen The antiserum was produced against synthesized peptide derived from human Chk1 around the phosphorylation site of Ser301. AA range:271-320

Specificity

Phospho-Chk1 (S301) Polyclonal Antibody detects endogenous levels of Chk1 protein only when phosphorylated at S301. The name of modified sites may be influenced by many factors, such as species (the modified site was not originally found in human samples) and the change of protein sequence (the previous protein sequence is incomplete, and the protein sequence may be prolonged with the development of protein sequencing technology). When naming, we will use the "numbers" in historical reference to keep the sites consistent with the reports. The antibody binds to the following modification sequence (lowercase letters are modification sites):DFsPV

| Target Information

Gene name CHEK1

Protein Name Serine/threonine-protein kinase Chk1

Organism	Gene ID	UniProt ID
Human	1111 ;	O14757 ;
Mouse	12649 ;	O35280 ;
Rat	140583 ;	Q91ZN7 ;

Cellular Localization

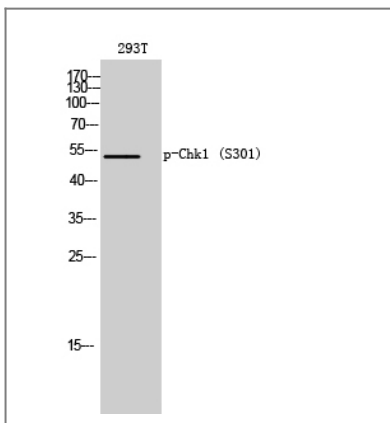
Nucleus . Chromosome . Cytoplasm . Cytoplasm , cytoskeleton , microtubule organizing center , centrosome . Nuclear export is mediated at least in part by XPO1/CRM1 (PubMed:12676962) . Also localizes to the centrosome specifically during interphase , where it may protect centrosomal CDC2 kinase from inappropriate activation by cytoplasmic CDC25B (PubMed:15311285) . Proteolytic cleavage at the C-terminus by SPRTN promotes removal from chromatin (PubMed:31316063) . .

Tissue specificity Expressed ubiquitously with the most abundant expression in thymus , testis , small intestine and colon.

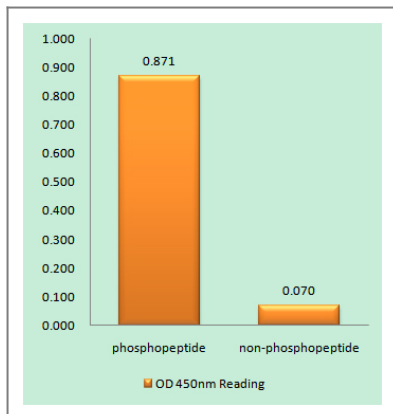
Function

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. ,

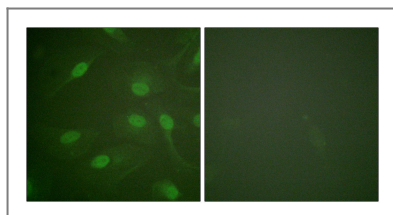
Validation Data



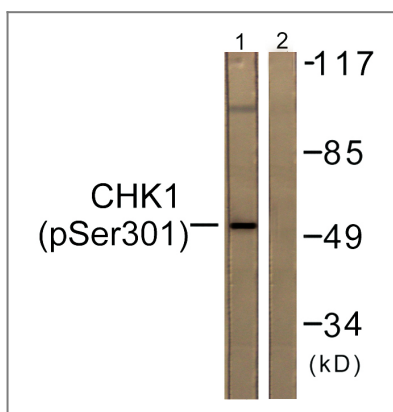
Western Blot analysis of 293T cells using Phospho-Chk1 (S301) Polyclonal Antibody diluted at 1:2000



Enzyme-Linked Immunosorbent Assay (Phospho-ELISA) for Immunogen Phosphopeptide (Phospho-left) and Non-Phosphopeptide (Phospho-right), using Chk1 (Phospho-Ser301) Antibody



Immunofluorescence analysis of HeLa cells, using Chk1 (Phospho-Ser301) Antibody. The picture on the right is blocked with the phospho peptide.



Western blot analysis of lysates from 293 cells, using Chk1 (Phospho-Ser301) Antibody. The lane on the right is blocked with the phospho peptide.

Contact information

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Chk1 (Phospho Ser301) Rabbit pAb

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