

**Product Name: Chk1 (phospho Ser296) Rabbit Polyclonal Antibody****Catalog #: APRab04453**

For research use only.

**Summary**

|                      |   |
|----------------------|---|
| <b>Description</b>   | Rabbit polyclonal Antibody  |
| <b>Host</b>          | Rabbit  |
| <b>Application</b>   | WB,IHC,ICC/IF,ELISA   |
| <b>Reactivity</b>    | Human,Rat,Mouse   |
| <b>Conjugation</b>   | Unconjugated  |
| <b>Modification</b>  | Phosphorylated  |
| <b>Isotype</b>       | IgG   |
| <b>Clonality</b>     | Polyclonal  |
| <b>Form</b>          | Liquid  |
| <b>Concentration</b> | 1mg/ml  |
| <b>Storage</b>       | Aliquot and store at -20°C (valid for 12 months). Avoid freeze/thaw cycles.                       |
| <b>Shipping</b>      | Ice bags  |
| <b>Buffer</b>        | Liquid in PBS containing 50% glycerol, 0.5% protective protein and 0.02% New type preservative N. |
| <b>Purification</b>  | Affinity purification   |

**Application**

|                         |  |
|-------------------------|--|
| <b>Dilution Ratio</b>   | WB 1:500-1:2000,IHC 1:100-1:300,ICC/IF 1:50-1:200,ELISA 1:5000-1:10000 |
| <b>Molecular Weight</b> | 45kDa  |

**Antigen Information**

|                          |  |
|--------------------------|--|
| <b>Gene Name</b>         | CHEK1  |
| <b>Alternative Names</b> | CHEK1; CHK1; Serine/threonine-protein kinase Chk1; CHK1 checkpoint homolog; Cell cycle checkpoint kinase; Checkpoint kinase-1              |
| <b>Gene ID</b>           | 1111.0   |
| <b>SwissProt ID</b>      | O14757   |
| <b>Immunogen</b>         | The antiserum was produced against synthesized peptide derived from human Chk1 around the phosphorylation site of Ser296. AA range:266-315 |

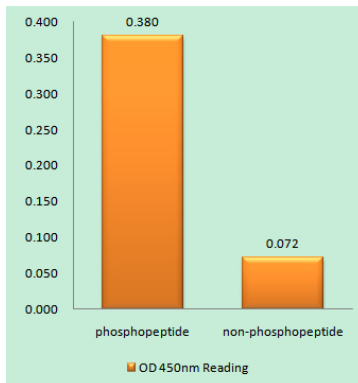
**Background**

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.,

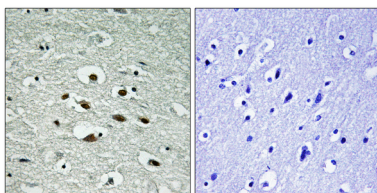
## Research Area

Cell\_Cycle\_G1S;Cell\_Cycle\_G2M\_DNA;p53;

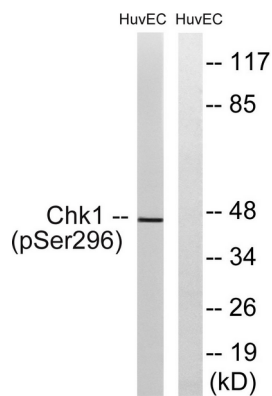
## Image Data



Enzyme-Linked Immunosorbent Assay ( Phospho-ELISA ) for Immunogen Phosphopeptide (Phospho-left) and Non-Phosphopeptide (Phospho-right) , using Chk1 (Phospho-Ser296) Antibody



Immunohistochemistry analysis of paraffin-embedded human brain, using Chk1 (P hospho-Ser296) Antibody. The picture on the right is blocked with the phosphopeptide.



Western blot analysis of lysates from HUVEC cells treated with UV 15' , using Chk1 (Phospho-Ser296) Antibody. The lane on the right is blocked with the phosphopeptide.