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Anti-CHK2 pT68 (RABBIT) Antibody

CHK2 phospho T68 Antibody
Catalog # ASR5187

Specification

Anti-CHK2 pT68 (RABBIT) Antibody - Product Information

Host	**Rabbit**
Conjugate	**Unconjugated**
Target Species	**Human**
Reactivity	**Human**
Clonality	**Polyclonal**
Application	**WB, E, IP, I, LCI**
Application Note	**This affinity purified antibody has been tested for use in ELISA and by western blot. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 61 kDa in size corresponding to CHK2 by western blotting in the appropriate cell lysate or extract. Less than 1% reactivity is observed against the non-phosphorylated form of the immunizing peptide. This antibody is phospho specific for pT68 of CHK2.**
Physical State	**Liquid (sterile filtered)**
Buffer	**0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2**
Immunogen	**This affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to an internal region near aa 50-75 of Human CHK2.**
Preservative	**0.01% (w/v) Sodium Azide**

Anti-CHK2 pT68 (RABBIT) Antibody - Additional Information

Gene ID 11200

Other Names
11200

Purity
This affinity purified antibody is directed against the phosphorylated form of human CHK2 at the pT68 residue. The product was affinity purified from monospecific antiserum by immunoaffinity purification. Antiserum was first purified against the phosphorylated form of the immunizing peptide. The resultant affinity purified antibody was then cross adsorbed against the non-phosphorylated form of the immunizing peptide. Reactivity occurs against human CHK2 pT68 protein and the antibody is specific for the phosphorylated form of the protein. Reactivity with non-phosphorylated human CHK2 is minimal by ELISA. The antibody does not cross-react with

Chk2 phosphorylated at other sites. A BLAST analysis was used to suggest reactivity with this protein from human and chimpanzee based on 100% homology for the immunogen sequence. Cross reactivity with CHK2 protein from mouse and rat may occur as sequence homology varies by one amino acid residues in this sequence (90% homology). Cross reactivity with CHK2 homologues from other sources has not been determined.

Storage Condition
Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

Precautions Note
This product is for research use only and is not intended for therapeutic or diagnostic applications.

Anti-CHK2 pT68 (RABBIT) Antibody - Protein Information

Name CHEK2 (HGNC:16627)

Synonyms CDS1, CHK2, RAD53

Function
Serine/threonine-protein kinase which is required for checkpoint-mediated cell cycle arrest, activation of DNA repair and apoptosis in response to the presence of DNA double-strand breaks. May also negatively regulate cell cycle progression during unperturbed cell cycles. Following activation, phosphorylates numerous effectors preferentially at the consensus sequence [L-X-R-X-X-S/T] (PubMed:37943659). Regulates cell cycle checkpoint arrest through phosphorylation of CDC25A, CDC25B and CDC25C, inhibiting their activity. Inhibition of CDC25 phosphatase activity leads to increased inhibitory tyrosine phosphorylation of CDK-cyclin complexes and blocks cell cycle progression. May also phosphorylate NEK6 which is involved in G2/M cell cycle arrest. Regulates DNA repair through phosphorylation of BRCA2, enhancing the association of RAD51 with chromatin which promotes DNA repair by homologous recombination. Also stimulates the transcription of genes involved in DNA repair (including BRCA2) through the phosphorylation and activation of the transcription factor FOXM1. Regulates apoptosis through the phosphorylation of p53/TP53, MDM4 and PML. Phosphorylation of p53/TP53 at 'Ser-20' by CHEK2 may alleviate inhibition by MDM2, leading to accumulation of active p53/TP53. Phosphorylation of MDM4 may also reduce degradation of p53/TP53. Also controls the transcription of pro-apoptotic genes through phosphorylation of the transcription factor E2F1. Tumor suppressor, it may also have a DNA damage-independent function in mitotic spindle assembly by phosphorylating BRCA1. Its absence may be a cause of the chromosomal instability observed in some cancer cells. Promotes the CCAR2-SIRT1 association and is required for CCAR2-mediated SIRT1 inhibition (PubMed:25361978). Under oxidative stress, promotes ATG7 ubiquitination by phosphorylating the E3 ubiquitin ligase TRIM32 at 'Ser-55' leading to positive regulation of the autophagosme assembly (PubMed:37943659).

Cellular Location
[Isoform 2]: Nucleus. Note=Isoform 10 is present throughout the cell [Isoform 7]: Nucleus. [Isoform 12]: Nucleus.

Tissue Location
High expression is found in testis, spleen, colon and peripheral blood leukocytes. Low expression is found in other tissues

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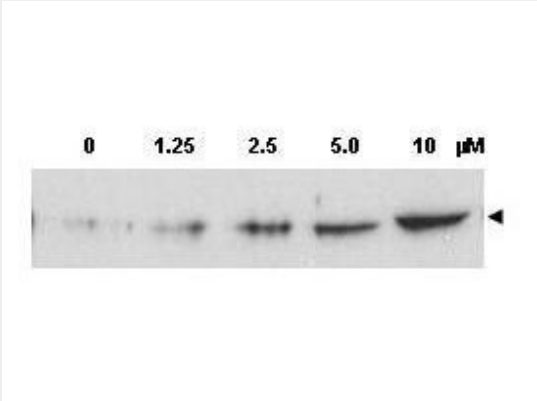
Anti-CHK2 pT68 (RABBIT) Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-CHK2 pT68 (RABBIT) Antibody - Images



Western blot using Rockland's Affinity Purified anti-Chk2 pT68 antibody shows detection of a predominant band at ~60 kDa corresponding to phosphorylated Chk2 (arrowhead) in MCF-7 whole cell lysates after treatment with doxorubicin. Chk2 phosphorylation was induced using increasing concentrations of the DNA damaging agent doxorubicin as indicated for 24 h prior to lysate production. Personal communication, Xiao HeYang, University of Oklahoma Health Sciences Center.

Anti-CHK2 pT68 (RABBIT) Antibody - Background

CHK2 (also known as CHEK2, Protein kinase CHK2 isoform a, and checkpoint-like protein) is a serine/ threonine-protein kinase involved in the control of cell cycle checkpoints and may also participate in transduction of the DNA damage and replicational stress signals. CHK2 is the mammalian ortholog of the budding yeast Rad53 and fission yeast Cds1 checkpoint kinases. The amino-terminal domain of CHK2 contains a series of seven serine and threonine residues (Ser19, Thr26, Ser28, Ser33, Ser35, Ser50 and Thr68) followed by glutamine (SQ or TQ motif). These are known to be preferred sites for phosphorylation by ATM/ATR kinases. Indeed, after DNA damage by ionizing radiation (IR), UV irradiation or hydroxyurea treatment, Thr68 and other sites in this region become phosphorylated by ATM/ATR. The SQ/TQ cluster domain, therefore, seems to have a regulatory function. Phosphorylation at Thr68 is a prerequisite for the subsequent activation step, which is attributable to autophosphorylation of Chk2 on residues Thr383 and Thr387 in the activation loop of the kinase domain. CHK2 inhibits CDC25C phosphatase by phosphorylating it on Ser-216, preventing the entry into mitosis. This kinase may have a role in meiosis as well. Kinase activity is up regulated by autophosphorylation and the protein is rapidly phosphorylated in response to DNA damage and to replication block.