Rabbit Chk1 Polyclonal Antibody | anti-CHK1 antibody

Phospho-Chk1 (Ser280) Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA30939	**Rabbit**	**Human, Mouse, Rat**	**Western Blot, Immunohistochemistry, Immunofluorescence, Immunocytochemistry, ELISA**

PRODUCT SYNONYMS

Chk1; Polyclonal Antibody; Phospho-Chk1 (Ser280) Antibody; C85740; Cell cycle checkpoint kinase; Checkpoint; S. pombe; homolog of; 1; Checkpoint kinase 1; Checkpoint kinase 1 homolog (S. pombe); CHEK 1; Chek1; Chk 1; CHK1 checkpoint homolog (S. pombe); CHK1_HUMAN; EC 2.7.11.1; rad27; Serine/threonine protein kinase Chk1; Serine/threonine-protein kinase CHK1; STT3; subunit of the oligosaccharyltransferase complex; homolog A (S. cerevisiae); anti-CHK1 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Isotype	IgG
Specificity	Phospho-Chk1 (Ser280) antibody detects endogenous levels of Chk1 only when phosphorylated at Serine 280
Purity/Purification	From purified rabbit serum by affinity purification via sequential chromatography on phospho-and non-phospho-peptide affinity columns.
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Sequence Length	476
Applicable Applications for anti-CHK1 antibody	WB (Western Blot), IHC (Immunohistochemistry), IF (Immunofluorescence), ICC (Immunocytochemistry), ELISA
Application Notes	WB: 1:500-1:2000 IHC: 1:50-1:500 IF/ICC: 1:100-1:500
Immunogen	A synthesized peptide derived from human Chk1 around the phosphorylation site of Serine 280
Subcellular Location	Cytoskeleton; Nucleus
Tissue Specificity	Expressed ubiquitously with the most abundant expression in thymus, testis, small intestine and colon.
Predicted Cross Reactivity	**Pig, Bovine, Horse, Sheep, Rabbit, Dog**
Similarity	Pig (100%), Bovine (82%), Horse (91%), Sheep (82%), Rabbit (91%), Dog (100%)
Conjugation	Unconjugated
Epitope	Phospho Ser280
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES

IHC (Immunohistochemistry)
AAA30939 at 1/100 staining rat appendiceal tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.

IHC (Immunohistochemistry)
AAA30939 at 1/100 staining rat kidney tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.

IHC (Immunohistochemistry)
AAA30939 at 1/100 staining human duodenum tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.

IHC (Immunohistochemistry)
AAA30939 at 1/100 staining rat ovarian tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.

IHC (Immunohistchemistry)
AAA30939 at 1/100 staining human appendiceal tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.

IHC (Immunohistochemistry)
AAA30939 at 1/100 staining human heart tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.

ADDITIONAL INFORMATION

Related Product Information for anti-CHK1 antibody	Description: DNA damage induced protein phosphorylation; regulation of mitotic centrosome separation; regulation of S phase; peptidyl-threonine phosphorylation; DNA repair; chromatin-mediated maintenance of transcription; negative regulation of mitosis. Function: Serine/threonine-protein kinase which is required for checkpoint-mediated cell cycle arrest and activation of DNA repair in response to the presence of DNA damage or unreplicated DNA. May also negatively regulate cell cycle progression during unperturbed cell cycles. This regulation is achieved by a number of mechanisms that together help to preserve the integrity of the genome. 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. Phosphorylation of CDC25A at 'Ser-76' primes the protein for subsequent phosphorylation at 'Ser-79', 'Ser-82' and 'Ser-88' by NEK11, which is required for polyubiquitination and degradation of CDCD25A. Inhibition of CDC25 leads to increased inhibitory tyrosine phosphorylation of CDK-cyclin complexes and blocks cell cycle progression. Also phosphorylates NEK6. Binds to and phosphorylates RAD51 at 'Thr-309', which promotes the release of RAD51 from BRCA2 and enhances the association of RAD51 with chromatin, thereby promoting DNA repair by homologous recombination. Phosphorylates multiple sites within the C-terminus of TP53, which promotes activation of TP53 by acetylation and promotes cell cycle arrest and suppression of cellular proliferation. Also promotes repair of DNA cross-links through phosphorylation of FANCE. Binds to and phosphorylates TLK1 at 'Ser-743', which prevents the TLK1-dependent phosphorylation of the chromatin assembly factor ASF1A. This may enhance chromatin assembly both in the presence or absence of DNA damage. May also play a role in replication fork maintenance through regulation of PCNA. May regulate the transcription of genes that regulate cell-cycle progression through the phosphorylation of histones. Phosphorylates histone H3.1 (to form H3T11ph), which leads to epigenetic inhibition of a subset of genes. May also phosphorylate RB1 to promote its interaction with the E2F family of transcription factors and subsequent cell cycle arrest. Subunit Structure: Interacts (phosphorylated by ATR) with RAD51. Interacts with and phosphorylates CLSPN, an adapter protein that regulates the ATR-dependent phosphorylation of CHEK1. Interacts with BRCA1. Interacts with and phosphorylates CDC25A, CDC25B and CDC25C. Interacts with FBXO6, which regulates CHEK1. Interacts with PPM1D, which regulates CHEK1 through dephosphorylation. Interacts with TIMELESS; DNA damage-dependent. Interacts with FEM1B; activates CHEK1 in response to stress. Interacts with TLK1. Interacts with XPO1 and YWHAZ. Isoform 1 associates with isoform 2, the interaction is disrupted upon phosphorylation by ATR. Interacts with CDK5RAP3; antagonizes CHEK1 (PubMed:19223857). Post-translational Modifications: 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 induces a change in the conformation of the protein, activates the kinase activity and is a prerequisite for interaction with FBXO6 and subsequent ubiquitination at Lys-436. 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. Phosphorylation at Ser-280 by AKT1/PKB, may promote mono and/or diubiquitination. Also phosphorylated at undefined residues during mitotic arrest, resulting in decreased activity. Ubiquitinated. Mono or diubiquitination promotes nuclear exclusion (By similarity). The activated form (phosphorylated on Ser-345) is polyubiquitinated at Lys-436 by some SCF-type E3 ubiquitin ligase complex containing FBXO6 promoting its degradation. Ubiquitination and degradation are required to terminate the checkpoint and ensure that activated CHEK1 does not accumulate as cells progress through S phase, when replication forks encounter transient impediments during normal DNA replication. Similarity: The autoinhibitory region (AIR) inhibits the activity of the kinase domain. Belongs to the protein kinase superfamily. CAMK Ser/Thr protein kinase family. NIM1 subfamily.
References	Jiang X, Wang J, Xing L, Shen H, Lian W, Yi L, Zhang D, Yang H, Liu J, Zhang X; Journal: Arch Toxicol. Sterigmatocystin-induced checkpoint adaptation depends on Chk1 in immortalized human gastric epithelial cells in vitro.

NCBI AND UNIPROT INFORMATION

NCBI GI #	166295194
NCBI GeneID	1111
NCBI Accession #	NP_001107593.1
NCBI GenBank Nucleotide #	NM_001114121.2
UniProt Accession #	O14757; A8K934; B4DDD0; B4DSK3; B5BTY6; F5H7S4; H2BI51

Molecular Weight	Observed: 56 kDa Predicted: 55 kDa
NCBI Official Full Name	serine/threonine-protein kinase Chk1 isoform 1
NCBI Official Synonym Full Names	checkpoint kinase 1
NCBI Official Symbol	CHEK1
NCBI Official Synonym Symbols	CHK1
NCBI Protein Information	serine/threonine-protein kinase Chk1
UniProt Protein Name	Serine/threonine-protein kinase Chk1
UniProt Gene Name	**CHEK1**
UniProt Synonym Gene Names	CHK1

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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