

Mouse anti-Human, mouse CHK1 Monoclonal Antibody | anti-CHEK1 antibody

CHK1 Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA283528	Mouse	Human, mouse	ELISA, Western Blot

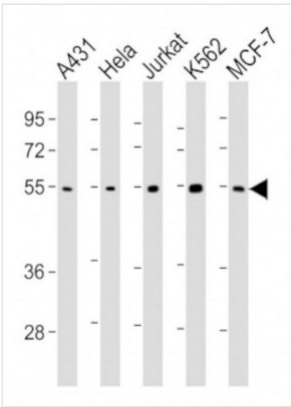
PRODUCT SYNONYMS

CHK1; Monoclonal Antibody; CHK1 Antibody; Serine/threonine-protein kinase Chk1; CHK1 checkpoint homolog; Cell cycle checkpoint kinase; Checkpoint kinase-1; CHEK1; anti-CHEK1 antibody

PRODUCT SPECIFICATIONS

Host	Mouse
Reactivity	Human, mouse
Clonality	Monoclonal
Isotype	Mouse IgM
Specificity	This monoclonal antibody is generated from mice immunized with Ni-NTA purified recombinant protein CHK1 expressed in E. Coli strain M15.
Purity/Purification	This antibody is purified through a protein G column, followed by dialysis against PBS.
Form/Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide.
Sequence Length	476
Applicable Applications for anti-CHEK1 antibody	ELISA, WB (Western Blot)

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 (PubMed:11535615, PubMed:12399544, PubMed:12446774, PubMed:14559997, PubMed:14988723, PubMed:15311285, PubMed:15650047, PubMed:15665856, PubMed:32357935). May also negatively regulate cell cycle progression during unperturbed cell cycles (PubMed:11535615, PubMed:12399544, PubMed:12446774, PubMed:14559997, PubMed:14988723, PubMed:15311285, PubMed:15650047, PubMed:15665856). This regulation is achieved by a number of mechanisms that together help to preserve the integrity of the genome (PubMed:11535615, PubMed:12399544, PubMed:12446774, PubMed:14559997, PubMed:14988723, PubMed:15311285, PubMed:15650047, PubMed:15665856). Recognizes the substrate consensus sequence [R-X-X- S/T] (PubMed:11535615, PubMed:12399544, PubMed:12446774, PubMed:14559997, PubMed:14988723, PubMed:15311285, PubMed:15650047, PubMed:15665856). Binds to and phosphorylates CDC25A, CDC25B and CDC25C (PubMed:12676583, PubMed:12676925, PubMed:12759351, PubMed:14559997, PubMed:14681206, PubMed:19734889, PubMed:9278511). 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 (PubMed:9278511). Phosphorylation of CDC25A at 'Ser- 76', 'Ser-124', 'Ser-178', 'Ser-279' and 'Ser-293' promotes proteolysis of CDC25A (PubMed:12676583, PubMed:12676925, PubMed:12759351, PubMed:14681206, PubMed:19734889, PubMed:9278511). 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 CDC25A (PubMed:19734889, PubMed:20090422, PubMed:9278511). Inhibition of CDC25 leads to increased inhibitory tyrosine phosphorylation of CDK-cyclin complexes and blocks cell cycle progression (PubMed:9278511). Also phosphorylates NEK6 (PubMed:18728393). 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 (PubMed:15665856). 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 (PubMed:10673501, PubMed:15659650, PubMed:16511572). Also promotes repair of DNA cross-links through phosphorylation of FANCE (PubMed:17296736). Binds to and phosphorylates TLK1 at 'Ser-743', which prevents the TLK1-dependent phosphorylation of the chromatin assembly factor ASF1A (PubMed:12660173, PubMed:12955071). This may enhance chromatin assembly both in the presence or absence of DNA damage (PubMed:12660173, PubMed:12955071). May also play a role in replication fork maintenance through regulation of PCNA (PubMed:18451105). May regulate the transcription of genes that regulate cell-cycle progression through the phosphorylation of histones (By similarity). Phosphorylates histone H3.1 (to form H3T11ph), which leads to epigenetic inhibition of a subset of genes (By similarity). May also phosphorylate RB1 to promote its interaction with the E2F family of transcription factors and subsequent cell cycle arrest (PubMed:17380128). Phosphorylates SPRTN, promoting SPRTN recruitment to chromatin (PubMed:31316063). Reduces replication stress and activates the G2/M checkpoint, by phosphorylating and inactivating PABIR1/FAM122A and promoting the serine/threonine-protein phosphatase 2A-mediated dephosphorylation and stabilization of WEE1 levels and activity (PubMed:33108758).
Cellular Location	Nucleus. Chromosome. Cytoplasm Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Note=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 Location	Expressed ubiquitously with the most abundant expression in thymus, testis, small intestine and colon
Preparation and Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

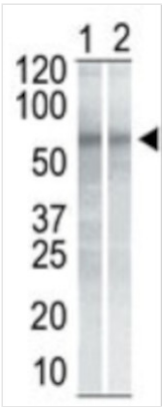


Application Data

All lanes : Anti-CHK1 Antibody at 1:1000-1:2000 dilution
Lane 1: A431 whole cell lysate
Lane 2: HeLa whole cell lysate
Lane 3: Jurkat whole cell lysate
Lane 4: K562 whole cell lysate
Lane 5: MCF-7 whole cell lysate
Lysates/proteins at 20 µg per lane.
Secondary Goat Anti-mouse IgM, (H+L), Peroxidase conjugated at 1/10000 dilution.
Predicted band size : 54 kDa
Blocking/Dilution buffer: 5% NFDM/TBST.

WB (Western Blot)

The anti-CHK1 Mab is used in Western blot to detect CHK1 in NIH/3T3 cell lysate (Lane 1) and K562 cell lysate (Lane 2).



ADDITIONAL INFORMATION

Product Categories/Family for anti-CHEK1 antibody	Cancer; Cardiovascular
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NCBI AND UNIPROT INFORMATION

NCBI GI #	166295194
NCBI GeneID	1111
NCBI Accession #	NP_001107593.1; NP_001107594.1; NP_001231775.1; NP_001265.2
NCBI GenBank Nucleotide #	NM_001114121.2
UniProt Accession #	O14757; A8K934; B4DDD0; B4DSK3; B5BTY6; F5H7S4; H2BI51
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
UniProt Entry Name	CHK1_HUMAN

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.