

**CHEK1 Antibody (internal region)**  
Peptide-affinity purified goat antibody  
Catalog # AF2730a

**Specification**

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**CHEK1 Antibody (internal region) - Product Information**

Application	WB
Primary Accession	<a href="#">O14757</a>
Other Accession	<a href="#">NP_001265.1</a> , <a href="#">1111</a>
Reactivity	Rat
Predicted	Human, Mouse
Host	Goat
Clonality	Polyclonal
Concentration	0.5 mg/ml
Isotype	IgG
Calculated MW	54434

**CHEK1 Antibody (internal region) - Additional Information**

**Gene ID** 1111

**Other Names**

Serine/threonine-protein kinase Chk1, 2.7.11.1, CHK1 checkpoint homolog, Cell cycle checkpoint kinase, Checkpoint kinase-1, CHEK1, CHK1

**Format**

0.5 mg/ml in Tris saline, 0.02% sodium azide, pH7.3 with 0.5% bovine serum albumin

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

CHEK1 Antibody (internal region) is for research use only and not for use in diagnostic or therapeutic procedures.

**CHEK1 Antibody (internal region) - Protein Information**

**Name** CHEK1

**Synonyms** CHK1

**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](http://www.uniprot.org/citations/11535615)), PubMed: [12399544](http://www.uniprot.org/citations/12399544)),

PubMed: <a href="http://www.uniprot.org/citations/12446774" target="\_blank">12446774</a>, PubMed: <a href="http://www.uniprot.org/citations/14559997" target="\_blank">14559997</a>, PubMed: <a href="http://www.uniprot.org/citations/14988723" target="\_blank">14988723</a>, PubMed: <a href="http://www.uniprot.org/citations/15311285" target="\_blank">15311285</a>, PubMed: <a href="http://www.uniprot.org/citations/15650047" target="\_blank">15650047</a>, PubMed: <a href="http://www.uniprot.org/citations/15665856" target="\_blank">15665856</a>, PubMed: <a href="http://www.uniprot.org/citations/32357935" target="\_blank">32357935</a>). May also negatively regulate cell cycle progression during unperturbed cell cycles (PubMed: <a href="http://www.uniprot.org/citations/11535615" target="\_blank">11535615</a>, PubMed: <a href="http://www.uniprot.org/citations/12399544" target="\_blank">12399544</a>, PubMed: <a href="http://www.uniprot.org/citations/12446774" target="\_blank">12446774</a>, PubMed: <a href="http://www.uniprot.org/citations/14559997" target="\_blank">14559997</a>, PubMed: <a href="http://www.uniprot.org/citations/14988723" target="\_blank">14988723</a>, PubMed: <a href="http://www.uniprot.org/citations/15311285" target="\_blank">15311285</a>, PubMed: <a href="http://www.uniprot.org/citations/15650047" target="\_blank">15650047</a>, PubMed: <a href="http://www.uniprot.org/citations/15665856" target="\_blank">15665856</a>). This regulation is achieved by a number of mechanisms that together help to preserve the integrity of the genome (PubMed: <a href="http://www.uniprot.org/citations/11535615" target="\_blank">11535615</a>, PubMed: <a href="http://www.uniprot.org/citations/12399544" target="\_blank">12399544</a>, PubMed: <a href="http://www.uniprot.org/citations/12446774" target="\_blank">12446774</a>, PubMed: <a href="http://www.uniprot.org/citations/14559997" target="\_blank">14559997</a>, PubMed: <a href="http://www.uniprot.org/citations/14988723" target="\_blank">14988723</a>, PubMed: <a href="http://www.uniprot.org/citations/15311285" target="\_blank">15311285</a>, PubMed: <a href="http://www.uniprot.org/citations/15650047" target="\_blank">15650047</a>, PubMed: <a href="http://www.uniprot.org/citations/15665856" target="\_blank">15665856</a>). Recognizes the substrate consensus sequence [R-X-X- S/T] (PubMed: <a href="http://www.uniprot.org/citations/11535615" target="\_blank">11535615</a>, PubMed: <a href="http://www.uniprot.org/citations/12399544" target="\_blank">12399544</a>, PubMed: <a href="http://www.uniprot.org/citations/12446774" target="\_blank">12446774</a>, PubMed: <a href="http://www.uniprot.org/citations/14559997" target="\_blank">14559997</a>, PubMed: <a href="http://www.uniprot.org/citations/14988723" target="\_blank">14988723</a>, PubMed: <a href="http://www.uniprot.org/citations/15311285" target="\_blank">15311285</a>, PubMed: <a href="http://www.uniprot.org/citations/15650047" target="\_blank">15650047</a>, PubMed: <a href="http://www.uniprot.org/citations/15665856" target="\_blank">15665856</a>). Binds to and phosphorylates CDC25A, CDC25B and CDC25C (PubMed: <a href="http://www.uniprot.org/citations/12676583" target="\_blank">12676583</a>, PubMed: <a href="http://www.uniprot.org/citations/12676925" target="\_blank">12676925</a>, PubMed: <a href="http://www.uniprot.org/citations/12759351" target="\_blank">12759351</a>, PubMed: <a href="http://www.uniprot.org/citations/14559997" target="\_blank">14559997</a>, PubMed: <a href="http://www.uniprot.org/citations/14681206" target="\_blank">14681206</a>, PubMed: <a href="http://www.uniprot.org/citations/19734889" target="\_blank">19734889</a>, PubMed: <a href="http://www.uniprot.org/citations/9278511" target="\_blank">9278511</a>). 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: <a href="http://www.uniprot.org/citations/9278511" target="\_blank">9278511</a>). Phosphorylation of CDC25A at 'Ser-76', 'Ser-124', 'Ser-178', 'Ser-279' and 'Ser-293' promotes proteolysis of CDC25A (PubMed: <a href="http://www.uniprot.org/citations/12676583" target="\_blank">12676583</a>, PubMed: <a href="http://www.uniprot.org/citations/12676925" target="\_blank">12676925</a>, PubMed: <a href="http://www.uniprot.org/citations/12759351" target="\_blank">12759351</a>, PubMed: <a href="http://www.uniprot.org/citations/14681206" target="\_blank">14681206</a>, PubMed: <a href="http://www.uniprot.org/citations/19734889" target="\_blank">19734889</a>, PubMed: <a href="http://www.uniprot.org/citations/9278511" target="\_blank">9278511</a>). 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: <a href="http://www.uniprot.org/citations/19734889" target="\_blank">19734889</a>, PubMed: <a href="http://www.uniprot.org/citations/20090422" target="\_blank">20090422</a>, PubMed: <a href="http://www.uniprot.org/citations/20090422" target="\_blank">20090422</a>, PubMed: <a href="http://www.uniprot.org/citations/20090422" target="\_blank">20090422</a>).

<http://www.uniprot.org/citations/9278511> target="\_blank">9278511</a>). Inhibition of CDC25 leads to increased inhibitory tyrosine phosphorylation of CDK-cyclin complexes and blocks cell cycle progression (PubMed:<a href="http://www.uniprot.org/citations/9278511" target="\_blank">9278511</a>). Also phosphorylates NEK6 (PubMed:<a href="http://www.uniprot.org/citations/18728393" target="\_blank">18728393</a>). 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:<a href="http://www.uniprot.org/citations/15665856" target="\_blank">15665856</a>). 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:<a href="http://www.uniprot.org/citations/10673501" target="\_blank">10673501</a>, PubMed:<a href="http://www.uniprot.org/citations/15659650" target="\_blank">15659650</a>, PubMed:<a href="http://www.uniprot.org/citations/16511572" target="\_blank">16511572</a>). Also promotes repair of DNA cross-links through phosphorylation of FANCE (PubMed:<a href="http://www.uniprot.org/citations/17296736" target="\_blank">17296736</a>). Binds to and phosphorylates TLK1 at 'Ser-743', which prevents the TLK1-dependent phosphorylation of the chromatin assembly factor ASF1A (PubMed:<a href="http://www.uniprot.org/citations/12660173" target="\_blank">12660173</a>, PubMed:<a href="http://www.uniprot.org/citations/12955071" target="\_blank">12955071</a>). This may enhance chromatin assembly both in the presence or absence of DNA damage (PubMed:<a href="http://www.uniprot.org/citations/12660173" target="\_blank">12660173</a>, PubMed:<a href="http://www.uniprot.org/citations/12955071" target="\_blank">12955071</a>). May also play a role in replication fork maintenance through regulation of PCNA (PubMed:<a href="http://www.uniprot.org/citations/18451105" target="\_blank">18451105</a>). 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:<a href="http://www.uniprot.org/citations/17380128" target="\_blank">17380128</a>). Phosphorylates SPRTN, promoting SPRTN recruitment to chromatin (PubMed:<a href="http://www.uniprot.org/citations/31316063" target="\_blank">31316063</a>). 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:<a href="http://www.uniprot.org/citations/33108758" target="\_blank">33108758</a>).

### 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

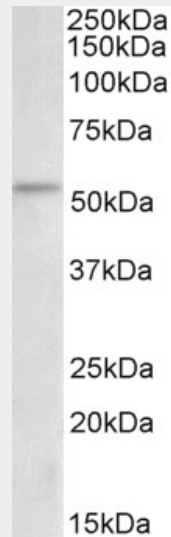
### CHEK1 Antibody (internal region) - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)

- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### **CHEK1 Antibody (internal region) - Images**



AF2730a (2  $\mu$ g/ml) staining of Rat Thymus lysate (35  $\mu$ g protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.

#### **CHEK1 Antibody (internal region) - References**

Identification of novel substrates for human checkpoint kinase Chk1 and Chk2 through genome-wide screening using a consensus Chk phosphorylation motif. Kim MA, Kim HJ, Brown AL, Lee MY, Bae YS, Park JI, Kwak JY, Chung JH, Yun J. Exp Mol Med. 2007 Apr 30;39(2):205-12. PMID: 17464182