

**Chk1 Rabbit mAb**  
Catalog # AP75258**Specification****Chk1 Rabbit mAb - Product Information**

Application	<b>WB</b>
Primary Accession	<a href="#">O14757</a>
Reactivity	<b>Human, Mouse, Rat</b>
Host	<b>Rabbit</b>
Clonality	<b>Monoclonal Antibody</b>
Calculated MW	<b>54434</b>

**Chk1 Rabbit mAb - Additional Information****Gene ID** 1111**Other Names**

CHEK1

**Dilution**

WB~~1/500-1/1000

**Format**

Liquid

**Chk1 Rabbit mAb - 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: [12446774](http://www.uniprot.org/citations/12446774), PubMed: [14559997](http://www.uniprot.org/citations/14559997), PubMed: [14988723](http://www.uniprot.org/citations/14988723), PubMed: [15311285](http://www.uniprot.org/citations/15311285), PubMed: [15650047](http://www.uniprot.org/citations/15650047), PubMed: [15665856](http://www.uniprot.org/citations/15665856), PubMed: [32357935](http://www.uniprot.org/citations/32357935)). May also negatively regulate cell cycle progression during unperturbed cell cycles (PubMed: [11535615](http://www.uniprot.org/citations/11535615), PubMed: [12399544](http://www.uniprot.org/citations/12399544), PubMed: [12446774](http://www.uniprot.org/citations/12446774), PubMed: [14559997](http://www.uniprot.org/citations/14559997), PubMed: [14988723](http://www.uniprot.org/citations/14988723), PubMed: [15311285](http://www.uniprot.org/citations/15311285), PubMed: [15650047](http://www.uniprot.org/citations/15650047), PubMed: [15665856](http://www.uniprot.org/citations/15665856), PubMed: [32357935](http://www.uniprot.org/citations/32357935)).

<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/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>).

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

#### Chk1 Rabbit mAb - 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](#)

#### Chk1 Rabbit mAb - Images



