



[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)). This regulation is achieved by a number of mechanisms that together help to preserve the integrity of the genome (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)). Recognizes the substrate consensus sequence [R-X-X- S/T] (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)). Binds to and phosphorylates CDC25A, CDC25B and CDC25C (PubMed: [12676583](http://www.uniprot.org/citations/12676583), PubMed: [12676925](http://www.uniprot.org/citations/12676925), PubMed: [12759351](http://www.uniprot.org/citations/12759351), PubMed: [14559997](http://www.uniprot.org/citations/14559997), PubMed: [14681206](http://www.uniprot.org/citations/14681206), PubMed: [19734889](http://www.uniprot.org/citations/19734889), PubMed: [9278511](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/9278511)). Phosphorylation of CDC25A at 'Ser-76', 'Ser-124', 'Ser-178', 'Ser-279' and 'Ser-293' promotes proteolysis of CDC25A (PubMed: [12676583](http://www.uniprot.org/citations/12676583), PubMed: [12676925](http://www.uniprot.org/citations/12676925), PubMed: [12759351](http://www.uniprot.org/citations/12759351), PubMed: [14681206](http://www.uniprot.org/citations/14681206), PubMed: [19734889](http://www.uniprot.org/citations/19734889), PubMed: [9278511](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/19734889), PubMed: [20090422](http://www.uniprot.org/citations/20090422), PubMed: [9278511](http://www.uniprot.org/citations/9278511)). Inhibition of CDC25 leads to increased inhibitory tyrosine phosphorylation of CDK-cyclin complexes and blocks cell cycle progression (PubMed: [9278511](http://www.uniprot.org/citations/9278511)). Also phosphorylates NEK6 (PubMed: [18728393](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/10673501), PubMed: [15659650](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

#### 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



