

**Anti-Chk1 CHEK1 Rabbit Monoclonal Antibody**  
**Catalog # ABO13299****Specification**

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**Anti-Chk1 CHEK1 Rabbit Monoclonal Antibody - Product Information**

|                   |                        |
|-------------------|------------------------|
| Application       | WB, IF, ICC, IP        |
| Primary Accession | <a href="#">O14757</a> |
| Host              | Rabbit                 |
| Isotype           | Rabbit IgG             |
| Reactivity        | Rat, Human, Mouse      |
| Clonality         | Monoclonal             |
| Format            | Liquid                 |

**Description**

Anti-Chk1 CHEK1 Rabbit Monoclonal Antibody . Tested in WB, ICC/IF, IP applications. This antibody reacts with Human, Mouse, Rat.

**Anti-Chk1 CHEK1 Rabbit Monoclonal Antibody - 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

**Calculated MW**

54434 MW KDa

**Application Details**

WB 1:500-1:2000<br>ICC/IF 1:50-1:200<br>IP 1:30

**Subcellular Localization**

Nucleus. Cytoplasm. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Nuclear export is mediated at least in part by XPO1/CRM1. Also localizes to the centrosome specifically during interphase, where it may protect centrosomal CDC2 kinase from inappropriate activation by cytoplasmic CDC25B.

**Tissue Specificity**

Expressed ubiquitously with the most abundant expression in thymus, testis, small intestine and colon..

**Contents**

Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.

**Immunogen**

A synthesized peptide derived from human Chk1

**Purification**

Affinity-chromatography

**Store at -20°C for one year. For short term storage and frequent use, store at 4°C for up to one month. Avoid repeated freeze-thaw cycles.**

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:<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>, 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/14681206" target="\_blank">14681206</a>, PubMed:<a href="http://www.uniprot.org/citations/14681206" target="\_blank">14681206</a>).

[19734889](http://www.uniprot.org/citations/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>, 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

#### Anti-Chk1 CHEK1 Rabbit Monoclonal Antibody - 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](#)

#### Anti-Chk1 CHEK1 Rabbit Monoclonal Antibody - Images

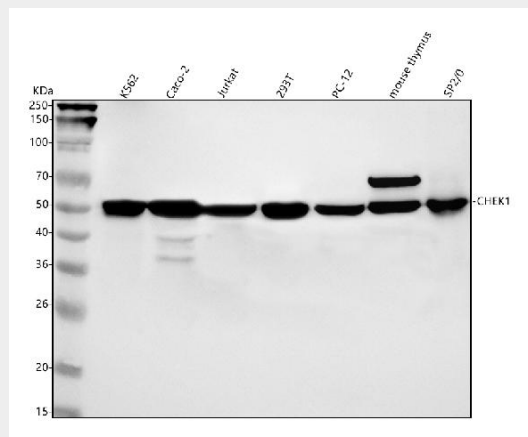


Figure 1. Western blot analysis of Chk1 using anti-Chk1 antibody (M01060-1).

Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.

Lane 1: human K562 whole cell lysates,  
Lane 2: human CACO-2 whole cell lysates,  
Lane 3: human Jurkat whole cell lysates,  
Lane 4: human 293T whole cell lysates,  
Lane 5: rat PC-12 whole cell lysates,  
Lane 6: mouse thymus tissue lysates,  
Lane 7: mouse SP2/0 whole cell lysates.

After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Chk1 antigen affinity purified monoclonal antibody (Catalog # M01060-1) at 1:500 overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:500 for 1.5

hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for Chk1 at approximately 54 kDa. The expected band size for Chk1 is at 54 kDa.