

Chk1 (7N8) Rabbit Monoclonal Antibody

Chk1 (7N8) Rabbit Monoclonal Antibody Catalog # AP93671

Product Information

Application	WB, IF, FC, ICC, IP
Primary Accession	<u>014757</u>
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Calculated MW	54434

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
Dilution	WB~~1:1000 IF~~1:50~200 FC~~1:10~50 ICC~~N/A IP~~N/A
Storage Conditions	-20°C

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: <u>11535615</u> , PubMed: <u>12399544</u> , PubMed: <u>12446774</u> , PubMed: <u>14559997</u> , PubMed: <u>14988723</u> , PubMed: <u>15311285</u> , PubMed: <u>15650047</u> , PubMed: <u>15665856</u> , PubMed: <u>32357935</u>). May also negatively regulate cell cycle progression during unperturbed cell cycles (PubMed: <u>11535615</u> , PubMed: <u>12399544</u> , PubMed: <u>12446774</u> , PubMed: <u>14559997</u> , PubMed: <u>14988723</u> , PubMed: <u>15311285</u> , PubMed: <u>14559997</u> , PubMed: <u>14988723</u> , PubMed: <u>15311285</u> , PubMed: <u>15650047</u> , PubMed: <u>15665856</u>). This regulation is achieved by a number of mechanisms that together help to preserve the integrity of the genome (PubMed: <u>11535615</u> , PubMed: <u>12399544</u> , PubMed: <u>12446774</u> , PubMed: <u>14559997</u> , PubMed: <u>14988723</u> , PubMed: <u>15311285</u> , PubMed: <u>14559997</u> , PubMed: <u>14988723</u> , PubMed: <u>15311285</u> , PubMed: <u>15650047</u> , PubMed: <u>15655856</u>). Recognizes the substrate consensus sequence [R-X-X-S/T] (PubMed: <u>11535615</u> , PubMed: <u>12399544</u> , PubMed: <u>15311285</u> , PubMed: <u>14559997</u> , PubMed: <u>14988723</u> , PubMed: <u>15311285</u> , PubMed: <u>14559997</u> , PubMed: <u>14988723</u> , PubMed: <u>15311285</u> , PubMed: <u>14559997</u> , PubMed: <u>15665856</u>). Binds to and phosphorylates CDC25A, CDC25B and CDC25C (PubMed: <u>12676583</u> , PubMed: <u>12676925</u> , PubMed: <u>12759351</u> , PubMed: <u>14559997</u> , PubMed: <u>14681206</u> , PubMed: <u>19734889</u> ,

	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 at CDC25C (PubMed:9278511). Phosphorylation of CDC25A at 'Ser-76', '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 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:1565856). 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:12660173, PubMed:15659650, PubMed:16511572). Also promotes repair of DNA cross-links through phosphorylation of FANCE (PubMed:12660173, PubMed:126596571). 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 phosphorylates PLK1 which leads to epigenetic inhibition of a subset of genes (By similarity). May also phosphorylates RAD51, PubMed:12456071). This may enhance chromatin assembly both in the presence or absence of DNA damage (PubMed:12660173, PubMed:12955071). May also phosphorylates histone H3.1 (to form H3T11ph), which leads to epigenetic inhibition of a subset of genes (By similarity). May also phosph
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
Images	

Western blot detection of Chk1 in K562,3T3,Hela cell lysates using Chk1 antibody(1:1000 diluted).



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