CHK2 Antibody – Polyclonal

PRODUCT OVERVIEW

Product Name	Chk2, Polyclonal Antibody
Full Product Name	Chk2 (phospho Ser516) Polyclonal Antibody
Product Gene Name	anti-Chk2 antibody
Clonality	Polyclonal
Molecular Weight	36,157 Da
OMIM	114480
3D Structure	ModBase 3D Structure for O96017
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for anti-Chk2 antibody	MBS8519838 is an antibody targeting Chk2. Also known as Chk2 (phospho Ser516) Polyclonal Antibody.
Other Notes	Small volumes of anti-Chk2 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for Chk2. It may not necessarily be applicable to this product.

NCBI GI #	54112407
NCBI GeneID	11200
NCBI Accession #	NP_001005735.1
UniProt Primary Accession #	O96017
UniProt Secondary Accession #	Q6QA03; Q6QA04; Q6QA05; Q6QA06; Q6QA07; Q6QA08; Q6QA10; A8K3Y9; B7ZBF3; B7ZBF4; B7ZBF5
UniProt Related Accession #	O96017
GenBank Nucleotide #	NM_001005735.1
NCBI Official Full Name	serine/threonine-protein kinase Chk2 isoform c
NCBI Official Synonym Full Names	checkpoint kinase 2
NCBI Official Symbol	CHEK2
NCBI Official Synonym Symbols	CDS1; CHK2; LFS2; RAD53; hCds1; HuCds1; PP1425
UniProt Protein Name	Serine/threonine-protein kinase Chk2
UniProt Synonym Protein Names	CHK2 checkpoint homolog; Cds1 homolog; Hucds1; hCds1; Checkpoint kinase 2
Protein Family	Serine/threonine-protein kinase
UniProt Gene Name	CHEK2
UniProt Synonym Gene Names	CDS1; CHK2; RAD53; Hucds1; hCds1
NCBI Protein Information	serine/threonine-protein kinase Chk2

NCBI Summary for Chk2	In response to DNA damage and replication blocks, cell cycle progression is halted through the control of critical cell cycle regulators. The protein encoded by this gene is a cell cycle checkpoint regulator and putative tumor suppressor. It contains a forkhead-associated protein interaction domain essential for activation in response to DNA damage and is rapidly phosphorylated in response to replication blocks and DNA damage. When activated, the encoded protein is known to inhibit CDC25C phosphatase, preventing entry into mitosis, and has been shown to stabilize the tumor suppressor protein p53, leading to cell cycle arrest in G1. In addition, this protein interacts with and phosphorylates BRCA1, allowing BRCA1 to restore survival after DNA damage. Mutations in this gene have been linked with Li-Fraumeni syndrome, a highly penetrant familial cancer phenotype usually associated with inherited mutations in TP53. Also, mutations in this gene are thought to confer a predisposition to sarcomas, breast cancer, and brain tumors. This nuclear protein is a member of the CDS1 subfamily of serine/threonine protein kinases. Several transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Apr 2012]
UniProt Comments for Chk2	Serine/threonine-protein kinase which is required for checkpoint-mediated cell cycle arrest, activation of DNA repair and apoptosis in response to the presence of DNA double-strand breaks. May also negatively regulate cell cycle progression during unperturbed cell cycles. Following activation, phosphorylates numerous effectors preferentially at the consensus sequence [L-X-R-X-X-S/T]. Regulates cell cycle checkpoint arrest through phosphorylation of CDC25A, CDC25B and CDC25C, inhibiting their activity. Inhibition of CDC25 phosphatase activity leads to increased inhibitory tyrosine phosphorylation of CDK-cyclin complexes and blocks cell cycle progression. May also phosphorylate NEK6 which is involved in G2/M cell cycle arrest. Regulates DNA repair through phosphorylation of BRCA2, enhancing the association of RAD51 with chromatin which promotes DNA repair by homologous recombination. Also stimulates the transcription of genes involved in DNA repair (including BRCA2) through the phosphorylation and activation of the transcription factor FOXM1. Regulates apoptosis through the phosphorylation of p53/TP53, MDM4 and PML. Phosphorylation of p53/TP53 at 'Ser-20' by CHEK2 may alleviate inhibition by MDM2, leading to accumulation of active p53/TP53. Phosphorylation of MDM4 may also reduce degradation of p53/TP53. Also controls the transcription of pro-apoptotic genes through phosphorylation of the transcription factor E2F1. Tumor suppressor, it may also have a DNA damage-independent function in mitotic spindle assembly by phosphorylating BRCA1. Its absence may be a cause of the chromosomal instability observed in some cancer cells. Promotes the CCAR2-SIRT1 association and is required for CCAR2-mediated SIRT1 inhibition (PubMed:25361978).
Research Articles on Chk2	**1.** These data suggest that the CHEK2 c.1100delC mutation is associated with an increased risk for MBC in the Finnish population.
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