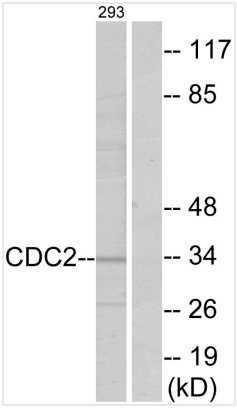
CDC2 Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

Product Name	CDC2, Polyclonal Antibody
Full Product Name	CDC2 Antibody
Product Gene Name	anti-CDC2 antibody
Product Synonym Gene Name	CDK1
Product Synonym Names	CDC28; CDC2A; CDK1; cell division control protein 2 homolog; cyclin-dependent kinase 1; kinase Cdc2; MPF; p34 protein kinase
Clonality	Polyclonal
Host	Rabbit
Species Reactivity	Human, Mouse, Rat
Form/Format	Rabbit IgG in phosphate buffered saline (without Mg2+ and Ca2+), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purity/Purification	Purified from rabbit antiserum by affinity-chromatography using immunogen.
Concentration	1 mg/ml (lot specific)
Specificity	CDC2 Antibody detects endogenous levels of total CDC2 protein.
Preparation and Storage	Stable at -20 degree C for at least 1 year.
Molecular Weight	34 kDa
OMIM	X05360 mRNA
3D Structure	ModBase 3D Structure for P06493
Target Modification	Unmodified/Total
Immunogen	The antiserum was produced against synthesized peptide derived from human CDC2.
Immunogen Range	May-54
Applications Tested/Suitable for anti-CDC2 antibody	Western Blot (WB), ELISA (EIA)
Application Notes for anti-CDC2 antibody	WB: 1:500~1:1000 ELISA: 1:10000
Related Product Information for anti-CDC2 antibody	MBS9504088 is an antibody targeting CDC2. Also known as CDC2 Antibody. Reactive in Human, Mouse, Rat. Host: Rabbit.
Other Notes	Small volumes of anti-CDC2 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.



Western Blot (WB) of anti-CDC2 antibody
Western blot analysis of lysates from 293 cells, using CDC2 Antibody. The lane on the right is blocked with the synthesized peptide.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for CDC2. It may not necessarily be applicable to this product.

NCBI GI #	1004170672
NCBI GeneID	983
NCBI Accession #	NP_001307847.1
UniProt Primary Accession #	P06493
UniProt Secondary Accession #	O60764; A8K7C4; C9J497
UniProt Related Accession #	P06493
GenBank Nucleotide #	NM_001320918.1
NCBI Official Full Name	cyclin-dependent kinase 1 isoform 1
NCBI Official Synonym Full Names	cyclin dependent kinase 1
NCBI Official Symbol	CDK1
NCBI Official Synonym Symbols	CDC2; CDC28A; P34CDC2
UniProt Protein Name	Cyclin-dependent kinase 1
UniProt Synonym Protein Names	Cell division control protein 2 homolog; Cell division protein kinase 1; p34 protein kinase
Protein Family	Cell division protein kinase
UniProt Gene Name	CDK1
UniProt Synonym Gene Names	CDC2; CDC28A; CDKN1; P34CDC2; CDK1
NCBI Protein Information	cyclin-dependent kinase 1
NCBI Summary for CDC2	The protein encoded by this gene is a member of the Ser/Thr protein kinase family. This protein is a catalytic subunit of the highly conserved protein kinase complex known as M-phase promoting factor (MPF), which is essential for G1/S and G2/M phase transitions of eukaryotic cell cycle. Mitotic cyclins stably associate with this protein and function as regulatory subunits. The kinase activity of this protein is controlled by cyclin accumulation and destruction through the cell cycle. The phosphorylation and dephosphorylation of this protein also play important regulatory roles in cell cycle control. Alternatively spliced transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Mar 2009]

UniProt Comments for CDC2	Plays a key role in the control of the eukaryotic cell cycle by modulating the centrosome cycle as well as mitotic onset; promotes G2-M transition, and regulates G1 progress and G1-S transition via association with multiple interphase cyclins. Required in higher cells for entry into S-phase and mitosis. Phosphorylates PARVA/actopaxin, APC, AMPH, APC, BARD1, Bcl-xL/BCL2L1, BRCA2, CALD1, CASP8, CDC7, CDC20, CDC25A, CDC25C, CC2D1A, CENPA, CSNK2 proteins/CKII, FZR1/CDH1, CDK7, CEBPB, CHAMP1, DMD/dystrophin, EEF1 proteins/EF-1, EZH2, KIF11/EG5, EGFR, FANCG, FOS, GFAP, GOLGA2/GM130, GRASP1, UBE2A/hHR6A, HIST1H1 proteins/histone H1, HMGA1, HIVEP3/KRC, LMNA, LMNB, LMNC, LBR, LATS1, MAP1B, MAP4, MARCKS, MCM2, MCM4, MKLP1, MYB, NEFH, NFIC, NPC/nuclear pore complex, PITPNM1/NIR2, NPM1, NCL, NUCKS1, NPM1/numatrin, ORC1, PRKAR2A, EEF1E1/p18, EIF3F/p47, p53/TP53, NONO/p54NRB, PAPOLA, PLEC/plectin, RB1, UL40/R2, RAB4A, RAP1GAP, RCC1, RPS6KB1/S6K1, KHDRBS1/SAM68, ESPL1, SKI, BIRC5/survivin, STIP1, TEX14, beta-tubulins, MAPT/TAU, NEDD1, VIM/vimentin, TK1, FOXO1, RUNX1/AML1, SIRT2 and RUNX2. CDK1/CDC2-cyclin-B controls pronuclear union in interphase fertilized eggs. Essential for early stages of embryonic development. During G2 and early mitosis, CDC25A/B/C-mediated dephosphorylation activates CDK1/cyclin complexes which phosphorylate several substrates that trigger at least centrosome separation, Golgi dynamics, nuclear envelope breakdown and chromosome condensation. Once chromosomes are condensed and aligned at the metaphase plate, CDK1 activity is switched off by WEE1- and PKMYT1-mediated phosphorylation to allow sister chromatid separation, chromosome decondensation, reformation of the nuclear envelope and cytokinesis. Inactivated by PKR/EIF2AK2- and WEE1-mediated phosphorylation upon DNA damage to stop cell cycle and genome replication at the G2 checkpoint thus facilitating DNA repair. Reactivated after successful DNA repair through WIP1-dependent signaling leading to CDC25A/B/C-mediated dephosphorylation and restoring cell cycle progression. In proliferating cells, CDK1-mediated FOXO1 phosphorylation at the G2-M phase represses FOXO1 interaction with 14-3-3 proteins and thereby promotes FOXO1 nuclear accumulation and transcription factor activity, leading to cell death of postmitotic neurons. The phosphorylation of beta-tubulins regulates microtubule dynamics during mitosis. NEDD1 phosphorylation promotes PLK1-mediated NEDD1 phosphorylation and subsequent targeting of the gamma-tubulin ring complex (gTuRC) to the centrosome, an important step for spindle formation. In addition, CC2D1A phosphorylation regulates CC2D1A spindle pole localization and association with SCC1/RAD21 and centriole cohesion during mitosis. The phosphorylation of Bcl-xL/BCL2L1 after prolongated G2 arrest upon DNA damage triggers apoptosis. In contrast, CASP8 phosphorylation during mitosis prevents its activation by proteolysis and subsequent apoptosis. This phosphorylation occurs in cancer cell lines, as well as in primary breast tissues and lymphocytes. EZH2 phosphorylation promotes H3K27me3 maintenance and epigenetic gene silencing. CALD1 phosphorylation promotes Schwann cell migration during peripheral nerve regeneration. CDK1-cyclin-B complex phosphorylates NCKAP5L and mediates its dissociation from centrosomes during mitosis (PubMed:26549230).
Research Articles on CDC2	**1.** These data show that complementary mechanisms, such as mother-daughter centriole proximity and CDK1-CyclinB interaction with centriolar components, ensure that centriole biogenesis occurs once and only once per cell cycle, raising parallels to the cell-cycle regulation of DNA replication and centromere formation.
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