

Product datasheet for MC202142

Cdk1 (NM_007659) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Cdk1 (NM_007659) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Cdk1
Synonyms:	Cdc2; Cdc2a; p34
Mammalian Cell Selection:	Neomycin
Vector:	PCMV6-Kan/Neo (PCMV6KN)
E. coli Selection:	Kanamycin (25 ug/mL)

Fully Sequenced ORF: >BC024396 sequence for NM_007659
 GTTGCTGCGTCCGCGCAGTCCGGAATGCGGTGTGGCCCCAGCCGGGACAGAGAGGGTCCGTCGTAACCT
 GTTGAGTAACTATGGAAGACTATATCAAAATAGAGAAAATTGGAGAAGGTAACCTACGGTGTGGTGTATAA
 GGGTAGACACAGAGTCACTGGCCAGATAGTGGCCATGAAGAAGATCAGACTTGAAAGCGAGGAAGAAGGA
 GTGCCAGTACTGCAATTCGGGAAATCTCTCTATTAAGAAGAACTTCGACATCCAAATATAGTCAGCCTGC
 AGGATGTGCTCATGCAGGACTCCAGGCTGTATCTCATCTTTGAGTTCCTGTCCATGGACCTCAAGAAGTA
 CCTGGACTCCATCCCTCTGGGCACTTCATGGATTCTTCACTCGTTAAGAGTTACTTACACCAAATCCTC
 CAGGGAATTGTGTTTTGCCACTCCCGGCGAGTTCTTACAGAGACTTGAAACCTCAAAATCTATTGATTG
 ATGACAAAGGAACAATCAAACTGGCTGATTTCCGCCTTCCAGAGCGTTTGAATACCGATACGAGTGTA
 CACACACGAGGTAGTGACGCTGTGGTACCGATCTCCAGAAGTGTGCTGGGCTCGGCTCGTTACTCCACT
 CCGGTTGACATCTGGAGTATAGGGACCATATTTGCAGAAGTGGCCACCAAGAAGCCGCTTTCCACGGCG
 ACTCAGAGATTGACCAGCTCTTCCAGGATCTTCCAGGCTCTGGGCACTCCTAACAACGAAGTGTGGCCAGA
 AGTCGAGTCCCTGCAGGACTACAAGAACACCTTTCCCAAGTGGAAAGCCGGGAGCCTCGCATCCACGCTC
 AAGAACCTGGACGAGAACGGCTTGGATTGCTCTCAAAATGCTAGTCTATGATCCTGCCAAACGAATCT
 CTGGCAAATGGCCCTGAAGCACCCGTAATTTGATGACTTGGACAATCAGATTAAGAAGATGTAGCCCTC
 TGGATGGATGTCCCTGTCTGCTGGTCTGAGGGGAAGATCGTGTGTTTACCGTTGGCTCTTCTCTGTCT
 TGTATAGTTTTCTTTGTTGTAAGTGTCTGACTTTTCTTAATTTCTACGTATAACTTAATTAAC
 ATGTAAATATTATCCATATGAATTTAAATATAATTTCTGTATATGTGCAAAAAAAAAAAAAAAAAAAAAA
 AAAAAAAAAAAAAAAAAAAAAA

Restriction Sites:	RsrII-NotI
ACCN:	NM_007659
Insert Size:	894 bp



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OTI Disclaimer:	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
Components:	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
Reconstitution Method:	<ol style="list-style-type: none">1. Centrifuge at 5,000xg for 5min.2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.3. Close the tube and incubate for 10 minutes at room temperature.4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.
RefSeq:	BC024396 , AAH24396
RefSeq Size:	1207 bp
RefSeq ORF:	894 bp
Locus ID:	12534
UniProt ID:	P11440
Cytogenetics:	10 36.07 cM
Gene Summary:	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, SAMHD1, 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 prolonged 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. Regulates the amplitude of the cyclic expression of the core clock gene ARNTL/BMAL1 by phosphorylating its transcriptional repressor NR1D1, and this phosphorylation is necessary for SCF(FBXW7)-mediated ubiquitination and proteasomal degradation of NR1D1 (By similarity).[UniProtKB/Swiss-Prot Function]