OriGene Technologies, Inc.
9620 Medical Center Drive, Ste 200
Rockville, MD 20850, US
Phone: +1-888-267-4436
https://www.origene.com
techsupport@origene.com
EU: info-de@origene.com
CN: techsupport@origene.cn

Product datasheet for MC200782

Cdk2 (NM_183417) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Cdk2 (NM_183417) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Cdk2
Synonyms:	A630093N05Rik
Mammalian Cell Selection:	Neomycin
Vector:	PCMV6-Kan/Neo (PCMV6KN)
E. coli Selection:	Kanamycin (25 ug/mL)

View online »

Fully Sequenced ORF:

>BC005654 sequence for NM_183417
GGCGGCAACATTGTTTCAAGTTGGACAAATTGTCAAGGGCTGAGCTCTCCTTGCGTTCCATCCCGAGCTG
GGACTGCCGTGCTCACCCGGGGTCCCCCAGGTCCTCCGCTCCGAGTGTCGGGCCCGCTTTCGTCAGGGTT
CCCGGGCCCCGCTCCCGGGGGCCTGAGCCGCCTCACTAGCGCTCCATGGAGAACTTCCAAAAGGTGGAGA
AGATTGGAGAGGGCACGTACGGAGTGGTGTACAAAGCCAAAAACAAGTTGACGGGAGAAGTTGTGGCGCT
TAAGAAGATCCGGCTCGACACTGAGACTGAAGGTGTACCCAGTACTGCCATCCGAGAGATCTCTCTCCTT
AAGGAACTTAATCACCCTAATATCGTCAAGCTGCTGGATGTCATCCACACAGAAAATAAGCTTTATCTGG
TTTTTGAATTTCTGCACCAGGACCTCAAGAAATTCATGGATGCCTCTGCTCTCACGGGCATTCCTCTTCC
CCTCATCAAGAGCTATCTGTTCCAGCTGCTCCAGGGCCTGGCTTTCTGCCATTCTCACCGTGTCCTTCAC
CGAGACCTTAAGCCCCAGAACCTGCTTATCAATGCAGAGGGGTCCATCAAGCTGGCAGACTTTGGACTAG
CAAGAGCCTTTGGAGTCCCTGTCCGAACTTACACTCATGAGGTGGTGACCCTGTGGTACCGAGCACCTGA
AATTCTTCTGGGCTGCAAGTACTACTCCACAGCCGTGGATATCTGGAGCCTGGGCTGCATCTTTGCTGAA
ATGCACCTAGTGTGTACCCAGCACCATGCTAAGTGCTGTGGGGAACACAGAAGAAATGGAAGACACAGTC
TCTGCCCGCTGTGCTCCTATCTAGAAGTGGCTGCATCACAAGGAGGGGGGATGACCGCAGTGTCTGCCCC
ACACCCCGTGACCCGCAGGGCCCTATTCCCTGGAGATTCTGAGATTGACCAACTCTTCCGGATCTTTCGG
ACTCTGGGGACCCCAGATGAGGTGGTTTGGCCAGGAGTTACTTCTATGCCTGATTATAAGCCAAGTTTCC
CCAAGTGGGCTCGGCAAGATTTTAGCAAAGTTGTGCCTCCCCTGGATGAAGATGGACGGAGCTTGTTATC
GCAAATGCTGCACTATGACCCCAACAAGCGGATTTCAGCCAAAGCAGCCCTGGCTCACCCTTTCTTCCAG
GATGTAACTAAACCAGTGCCCCACCTTCGGCTCTGATGCCCTTCCCAAAGCCCTTTTCACCCGTGGTCTG
ACTTGACCCTGGGCCTTTTGGACACAGGTCAGCCTTCTGATGTTTTCTGGCTGTCTTAGCATTCGCCTTT
TCTCTTGCCAGCCAGTTCTGGGGATTCAGAGGTGCAGGGAAGGGTTAGGGAAAAGGGGGCAAGGTTTTGG
CATTAGATGCACTTAACCCGGCTTCCACCAGCTTCTTCCCCTCTTCTCAGTCATTACTGAGAAGGATTGG
TATTCAAAGCAAAACTGACAGTTTTCCCCTGTGTCAGGTTTTGCCATCCCAATCTTAAGACTGTCTCATA
ATTACCATGTTGAGGGAAACGCCCCCAGACTCCTGCTGCCACTGTTTTGTGAACTAATGAACATGAGCAG
AAGCCTAAGTTGGGACAGCTCAGAACCAAGCAAGAGGGGGCCGTTTTAATGAATTAGATTGAAAAATAGG
CCTAAGCCGTTTGTACCTTAGTTTTAGCGTTCGGCCTCACCTAGCAATCAAGGGCCCGTTTGGAGAAGCA
GAAATGATTCCCTCCAGTGCCCTGTCTACCTTCCCCAGGCAAGAAGAGCCAGGAGGGCACAGGGCTTGCA
CGTCACTCTGGTCTGTTCATCGTGGTTCACAGGGCAAGGTGAAAGACACTTGAATTTCTCTTTTTAGCAA
TCTTACTGTTTTCTGGTGCTGACTGCTACACCCAGGACTTTGCCCTCACTAAGCAAATGTACCACCAATG
AGCCAGGTTCCTAGCCTTCCTTTTGGAAGCTCAGTTCTTGAGTTGTCAGAGGGCCTCATTGCCGTCCTCC
TCTGAGAGCAGTGATGCAGGCCAGGAGACATCATTTGAGAATGCTGATGCTTTTGTAAGGCTTTGACCTG
GTTAGGTCATTGGGGGAAATTTTCTATAAAAGAGTGAACAATTATATTTATATTTCAAGTTAAAGTAGTT
TGGATACTTTAGTGGTTTTGTTGTTGTTTCTTCTTTTTCCTTTTTTTTTTTTTTTTGTCAGTGTGGATGGA
TTTGTTGCCATGTGCACTTTGGGATTTTGTAATTGTTAAAAGAAAATATTTCTTTTATGATTTTCTTCTC
CCACTCCCTGTCCTCCAGTGTTCTGTTAATATTATTTGTAATTTAGTTTGTAAATTCATTAAAAGAAAAT
ATTCTCAAAAAAAAAAAAAAAAAAAAAAAAA

Restriction Sites: RsrII-NotI

ACCN: NM_183417

Insert Size: 1041 bp

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:	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:	BC005654, AAH05654
RefSeq Size:	2411 bp
RefSeq ORF:	1041 bp
Locus ID:	12566
UniProt ID:	P97377
Cytogenetics:	10 D3

Gene Summary:

Serine/threonine-protein kinase involved in the control of the cell cycle; essential for meiosis, but dispensable for mitosis. Phosphorylates CTNNB1, USP37, p53/TP53, NPM1, CDK7, RB1, BRCA2, MYC, NPAT, EZH2. Triggers duplication of centrosomes and DNA. Acts at the G1-S transition to promote the E2F transcriptional program and the initiation of DNA synthesis, and modulates G2 progression; controls the timing of entry into mitosis/meiosis by controlling the subsequent activation of cyclin B/CDK1 by phosphorylation, and coordinates the activation of cyclin B/CDK1 at the centrosome and in the nucleus. Crucial role in orchestrating a fine balance between cellular proliferation, cell death, and DNA repair in human embryonic stem cells (hESCs). Activity of CDK2 is maximal during S phase and G2; activated by interaction with cyclin E during the early stages of DNA synthesis to permit G1-S transition, and subsequently activated by cyclin A2 (cyclin A1 in germ cells) during the late stages of DNA replication to drive the transition from S phase to mitosis, the G2 phase. EZH2 phosphorylation promotes H3K27me3 maintenance and epigenetic gene silencing. Phosphorylates CABLES1 (By similarity). Cyclin E/CDK2 prevents oxidative stress-mediated Ras-induced senescence by phosphorylating MYC. Involved in G1-S phase DNA damage checkpoint that prevents cells with damaged DNA from initiating mitosis; regulates homologous recombination-dependent repair by phosphorylating BRCA2, this phosphorylation is low in S phase when recombination is active, but increases as cells progress towards mitosis. In response to DNA damage, double-strand break repair by homologous recombination a reduction of CDK2-mediated BRCA2 phosphorylation. Phosphorylation of RB1 disturbs its interaction with E2F1. NPM1 phosphorylation by cyclin E/CDK2 promotes its dissociates from unduplicated centrosomes, thus initiating centrosome duplication. Cyclin E/CDK2-mediated phosphorylation of NPAT at G1-S transition and until prophase stimulates the NPAT-mediated activation of histone gene transcription during S phase. Required for vitamin D-mediated growth inhibition by being itself inactivated. Involved in the nitric oxide- (NO) mediated signaling in a nitrosylation/activation-dependent manner. USP37 is activated by phosphorylation and thus triggers G1-S transition. CTNNB1 phosphorylation regulates insulin internalization. Phosphorylates FOXP3 and negatively regulates its transcriptional activity and protein stability (PubMed:23853094). Phosphorylates CDK2AP2 (By similarity).[UniProtKB/Swiss-Prot Function]
Transcript Variant: This variant (1) represents the longer transcript and encodes the longer isoform (1).