

Product datasheet for **RC200494**

CDK2 (NM_001798) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	CDK2 (NM_001798) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	CDK2
Synonyms:	CDKN2; p33(CDK2)
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>RC200494 ORF sequence Red=Cloning site Blue=ORF Green=Tags(s)

TTTGTAAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGGAGAACTTCCAAAAGGTGGAAAAGATCGGAGAGGGCACGTACGGAGTTGTGTACAAAGCCAGAAACA
AGTTGACGGGAGAGGTGGTGGCGCTTAAGAAAATCCGCCTGGACACTGAGACTGAGGGTGTGCCAGTAC
TGCCATCCGAGAGATCTCTCGCTTAAGGAGCTTAACCATCCTAATTGTCAAGCTGCTGGATGTCATT
CACACAGAAAATAAACTCTACCTGGTTTTTGAATTTCTGCACCAAGATCTCAAGAAATTCATGGATGCCT
CTGCTCTCACTGGCATTCTCTTCCCCTCATCAAGAGCTATCTGTTCCAGCTGCTCCAGGGCCTAGCTTT
CTGCCATTCTCATCGGGTCTCCACCGAGACCTTAAACCTCAGAATCTGCTTATTAACACAGAGGGGGCC
ATCAAGCTAGCAGACTTTGGACTAGCCAGAGCTTTTGGAGTCCCTGTTCTGTAATTACACCATGAGGTGG
TGACCCTGTGGTACCGAGCTCCTGAAATCCTCCTGGGCTGCAATATTATTCCACAGCTGTGGACATCTG
GAGCCTGGGCTGCATCTTTGCTGAGATGGTGACTCGCCGGGCCCTATTCCCTGGAGATTCTGAGATTGAC
CAGCTCTTCCGGATCTTTCGGACTCTGGGGACCCAGATGAGGTGGTGTGGCCAGGAGTTACTTCTATGC
CTGATTACAAGCCAAGTTTCCCAAGTGGGCCCGCAAGATTTAGTAAAGTTGTACCTCCCCTGGATGA
AGATGGACGGAGCTTGTATCGCAAATGCTGCACTACGACCCTAACAAGCGGATTTGGCCAAGGCAGCC
CTGGCTCACCTTTCTTCCAGGATGTGACCAAGCCAGTACCCCATCTTCGACTC

ACGCGTACGCGGGCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA



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Protein Sequence: >RC200494 protein sequence
 Red=Cloning site Green=Tags(s)

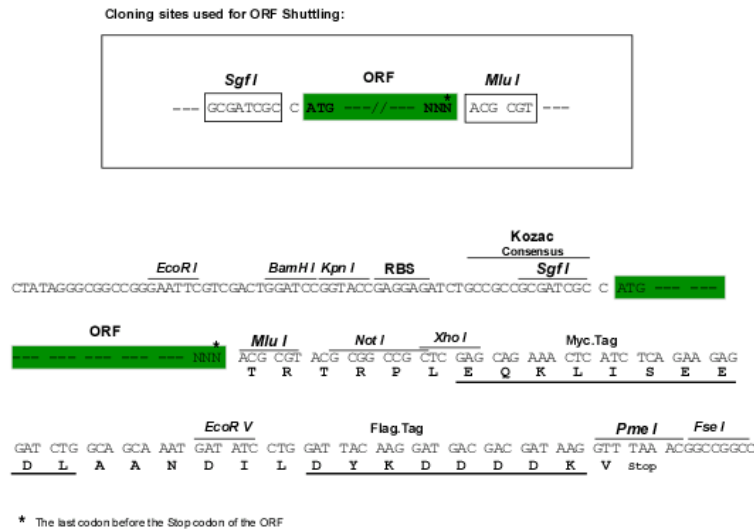
MENFQKVEKIGEGTYGVVYKARNKLTGEVVALKKIRLDTETEGVPSTAIREISLLKELNHPNIVKLLDVI
 HTENKLYLVFEFLHQDLKKFMDASALTGIPLPLIKSYLFQLLQGLAFCHSHRVLHRDLKPQNLLINTEGA
 IKLADFGLARAFGVPVRYTYHEVVTWYRAPEILLGCKYYSTAVDIWSLGCIFAEMVTRRALFPGDSEID
 QLFRIFRITLGTDPDEVVWPGVTSMPDYKPSFPKWARQDFSKVVPPLDEDEGRSLLSQMLHYDPNKRISAKAA
 LAHPFFQDVTKPVPHRLRL

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mk6080_g03.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_001798

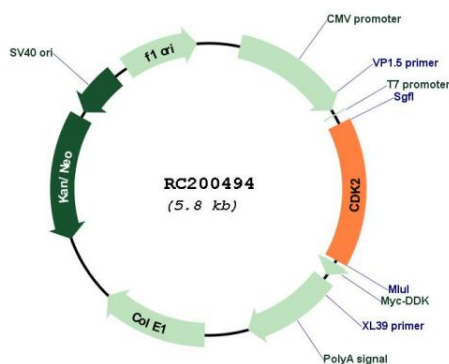
ORF Size: 894 bp

OTI Disclaimer: Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.

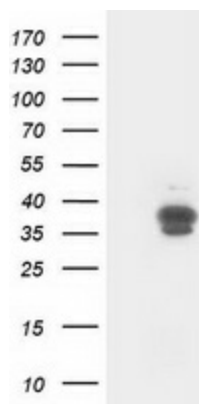
The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

OTI Annotation:	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
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.
Note:	Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.
RefSeq:	<u>NM_001798.5</u>
RefSeq Size:	2301 bp
RefSeq ORF:	897 bp
Locus ID:	1017
UniProt ID:	<u>P24941</u>
Cytogenetics:	12q13.2
Domains:	pkinase, TyrKc, S_TKc
Protein Families:	Druggable Genome, Protein Kinase
Protein Pathways:	Cell cycle, Oocyte meiosis, p53 signaling pathway, Pathways in cancer, Progesterone-mediated oocyte maturation, Prostate cancer, Small cell lung cancer
MW:	33.9 kDa
Gene Summary:	This gene encodes a member of a family of serine/threonine protein kinases that participate in cell cycle regulation. The encoded protein is the catalytic subunit of the cyclin-dependent protein kinase complex, which regulates progression through the cell cycle. Activity of this protein is especially critical during the G1 to S phase transition. This protein associates with and regulated by other subunits of the complex including cyclin A or E, CDK inhibitor p21Cip1 (CDKN1A), and p27Kip1 (CDKN1B). Alternative splicing results in multiple transcript variants. [provided by RefSeq, Mar 2014]

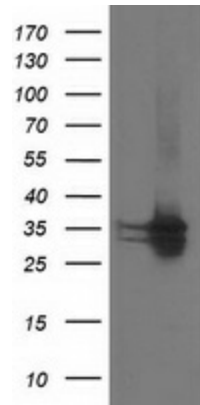
Product images:



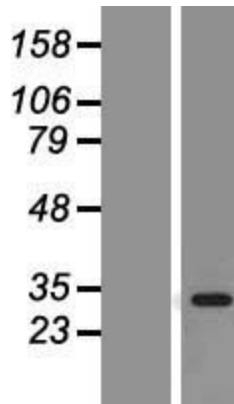
Circular map for RC200494



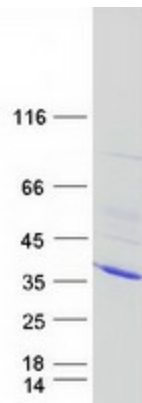
HEK293T cells were transfected with the pCMV6-ENTRY control (Left lane) or pCMV6-ENTRY CDK2 (RC200494, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-CDK2 [TA502808]. Positive lysates [LY419741] (100ug) and [LC419741] (20ug) can be purchased separately from OriGene.



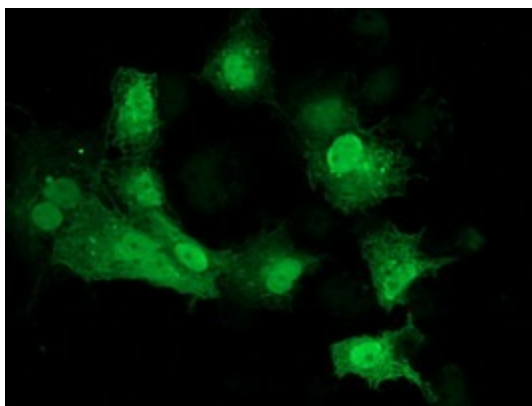
HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY CDK2 (Cat# RC200494, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-CDK2 (Cat# [TA502935]). Positive lysates [LY419741] (100ug) and [LC419741] (20ug) can be purchased separately from OriGene.



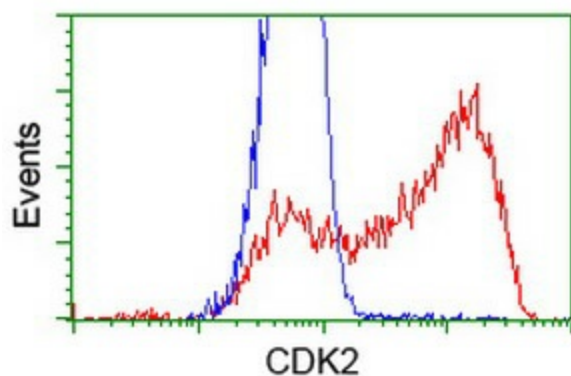
Western blot validation of overexpression lysate (Cat# [LY419741]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC200494 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified CDK2 protein (Cat# [TP300494]). The protein was produced from HEK293T cells transfected with CDK2 cDNA clone (Cat# RC200494) using MegaTran 2.0 (Cat# [TT210002]).



Anti-CDK2 mouse monoclonal antibody ([TA502808]) immunofluorescent staining of COS7 cells transiently transfected by pCMV6-ENTRY CDK2 (RC200494).



HEK293T cells transfected with either RC200494 overexpress plasmid (Red) or empty vector control plasmid (Blue) were immunostained by anti-CDK2 antibody ([TA502808]), and then analyzed by flow cytometry.