

## Product datasheet for **SC323451**

### CDK4 (NM\_000075) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	CDK4 (NM_000075) Human Untagged Clone
Tag:	Tag Free
Symbol:	CDK4
Synonyms:	CMM3; PSK-J3
Mammalian Cell Selection:	None
Vector:	<u><a href="#">pCMV6-XL5</a></u>
E. coli Selection:	Ampicillin (100 ug/mL)
Fully Sequenced ORF:	>NCBI ORF sequence for NM_000075, the custom clone sequence may differ by one or more nucleotides

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ATGGCTACCTCTCGATATGAGCCAGTGGCTGAAATTGGTGTGGTGCCTATGGGACAGTGTACAAGGCC  
GTGATCCCCACAGTGGCCACTTTGTGGCCCTCAAGAGTGTGAGAGTCCCAATGGAGGAGGAGGTGGAGG  
AGGCCTTCCCATCAGCACAGTTCGTGAGGTGGCTTTACTGAGGCGACTGGAGGCTTTTGAGCATCCCAAT  
GTTGTCCGGCTGATGGACGTCTGTGCCACATCCCGAACTGACCGGGAGATCAAGGTAACCCTGGTGTG  
AGCATGTAGACCAGGACCTAAGGACATATCTGGACAAGGCACCCACCAGGCTTCCAGCCGAAACGAT  
CAAGGATCTGATGCGCCAGTTTCTAAGAGGCCTAGATTTCTTCATGCCAATTGCATCGTTCACCGAGAT  
CTGAAGCCAGAGAACATTCTGGTGACAAGTGGTGAACAGTCAAGCTGGCTGACTTTGGCCTGGCCAGAA  
TCTACAGCTACCAGATGGCACTTACACCCGTGGTTGTTACACTCTGGTACCGAGCTCCCGAAGTTCTTCT  
GCAGTCCACATATGCAACACCTGTGGACATGTGGAGTGTGGCTGTATCTTTGCAGAGATGTTTCGTCGA  
AAGCCTCTCTTGTGGAACTCTGAAGCCGACCAGTTGGGCAAATCTTTGACCTGATTGGGCTGCCTC  
CAGAGGATGACTGGCCTCGAGATGTATCCCTGCCCCGTGGAGCCTTTCCCCCAGAGGGCCCCGCCAGT  
GCAGTCGGTGGTACCTGAGATGGAGGAGTCGGGAGCACAGCTGCTGCTGGAAATGCTGACTTTTAACCCA  
CACAAGCGAATCTCTGCCTTTCGAGCTCTGCAGCACTTATCTACATAAGGATGAAGGTAATCCGGAGT  
GA
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<b>5' Read Nucleotide Sequence:</b>	>OriGene 5' read for mutant NM_000075 unedited CCCGCCCGTCTGAGCAATGGGCGGTAGGCGGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTG AACCGTCAGAATTTTGTAAACGACTCACTATAGGGCGGCCGGAATTCGGCACGAGGGTCTATGGTCGG GCCCTCTGCGTCCAGCTGCTCCGGACCGAGCTCGGGTGTATGGGGCCGTAGGAACCGGCTCCGGGGCCCC GATAACGGGCCGCCCCACAGCACCCCGGGCTGGCGTGAGGGTCTCCCTTGATCTGAGAATGGCTACCTC TCGATATGAGCCAGTGGCTGAAAATTGGTGTGGTGCCTATGGGACAGTGTACAAGGCCCGGTGATCCC CACAGTGGCCACTTTTGTGGCCCTCATGGAGTTGTGAAGAGTCCCCCAATGGGAGGAAGGAAGGTGAAGG AAGGCCTCCCCATCACCCAGTTCTTGAGGGGGCCTAACGGAGGCAATGGGAAGGTTTTTAAGCTTCCA ATGTTGTCCGGCGAAGGACTTCTGTCCCCATCCCCAACCTGACGAAATATCAGGTAACCCGGGTTTTT AAACCTTTAACCAGAACCATAGGGCAATGTCGGGCACAGGGACCCCCACAGTTTTGCGCCAAACATAT CAGGGATTGAGCGCCGATTTTAGAGACCCAAATCCCCTAGCGCATTGTCTCTCGCGAATTTGACCAGAC ACATTGTGGAACATGGAGAACAACAGCGAAAA
<b>Kinase Domain Sequence:</b>	>SC323451 kinase domain raw sequence. By performing <a href="#">BLASTX</a> analysis with this sequence against NCBI reference protein database, you can confirm the presence of the kinase-deficient mutation CYTTTKAMGCAATGGGCGGTAGGCGGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGYGAACCG TCAGAATTTTGTAAACGACTCACTATAGGGCGGCCGGAATTCGGCACGAGGGTCTATGGTCGGGCCCT CTGCGTCCAGCTGCTCCGGACCGAGCTCGGGTGTATGGGGCCGTAGGAACCGGCTCCGGGGCCCCGATAA CGGGCCGCCCCACAGCACCCCGGGCTGGCGTGAGGGTCTCCCT
<b>Restriction Sites:</b>	Please inquire
<b>ACCN:</b>	NM_000075
<b>Insert Size:</b>	1960 bp
<b>OTI Disclaimer:</b>	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 <a href="mailto:custsupport@origene.com">custsupport@origene.com</a> 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. <a href="#">More info</a>
<b>OTI Annotation:</b>	This kinase-deficient mutant clone was generated by created by site-directed mutagenesis from the corresponding wild-type clone. See details in "Application of active and kinase-deficient kinome collection for identification of kinases regulating hedgehog signaling." <a href="#">Cell</a> . 2008 May p536-548.
<b>Components:</b>	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:** [NM\\_000075.2](#), [NP\\_000066.1](#)

**RefSeq Size:** 1474 bp

**RefSeq ORF:** 912 bp

**Locus ID:** 1019

**UniProt ID:** [P11802](#)

**Cytogenetics:** 12q14.1

**Domains:** pkinase, TyrKc, S\_TKc

**Protein Families:** Druggable Genome, Protein Kinase

**Protein Pathways:** Bladder cancer, Cell cycle, Chronic myeloid leukemia, Glioma, Melanoma, Non-small cell lung cancer, p53 signaling pathway, Pancreatic cancer, Pathways in cancer, Small cell lung cancer, T cell receptor signaling pathway, Tight junction

**Gene Summary:** The protein encoded by this gene is a member of the Ser/Thr protein kinase family. This protein is highly similar to the gene products of *S. cerevisiae* cdc28 and *S. pombe* cdc2. It is a catalytic subunit of the protein kinase complex that is important for cell cycle G1 phase progression. The activity of this kinase is restricted to the G1-S phase, which is controlled by the regulatory subunits D-type cyclins and CDK inhibitor p16(INK4a). This kinase was shown to be responsible for the phosphorylation of retinoblastoma gene product (Rb). Mutations in this gene as well as in its related proteins including D-type cyclins, p16(INK4a) and Rb were all found to be associated with tumorigenesis of a variety of cancers. Multiple polyadenylation sites of this gene have been reported. [provided by RefSeq, Jul 2008]  
Transcript Variant: This variant (1) encodes the full length protein.