

## Product datasheet for **MG204375**

### **Cdk7 (BC004605) Mouse Tagged ORF Clone**

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Cdk7 (BC004605) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Cdk7
Synonyms:	AI323415; AI528512; C230069N13; Cdkn7; Crk4
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>MG204375 representing BC004605 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGC**

ATGGCTGTGGACGTGAAGTCTCGAGCGAAGCGCTATGAGAACTGGACTTCCTCGGAGAGGGACAGTTTG  
CGACGGTCTATAAGGCCAGGGACAAGAACACCAACCAATCGTCGCCATTAAGAAAATCAAACCTGGACA  
CAGGTGAGAAGCTAAGGATGGAATAAATAGAACAGCCTTAAGGGAGATAAAGCTTTACAGGAACCTAAGT  
CATCCAAATATAATTGGTCTCCTTGATGCATTTGGACATAAGTCTAACATTAGCCTTGCTTTGATTTTA  
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AGATTTTGGCCTGGCCAAATCATTTGGGAGCCCCAATAGGGCTTACACACATCAAGTTGTGACCAGATGG  
TACCGGGCTCCTGAGTTATTGTTGGAGCTAGGATGTATGGTGTGGGAGTAGACATGTGGCTGTTGGTT  
GTATATTAGCAGAATTGCTTCTAAGGGTTCCATTTTGCCTGGAGATTCAGATCTTGATCAGCTAACAAG  
GATATTTGAACTCTGGGTACACCAACTGAAGAGCAGTGGCTGACATGTGTAGTCTCCCGATTATGTG  
ACATTTAAGAGTTTCCCTGGGGTCCCACTGCAGCACATCTTCATCGCGCTGGGGACGACCTGCTGGAGC  
TCATCCAAGGCCTGTTCTTATTTAACCCGTGTACGCGGACCACAGCCTCACAGGCATTGAAGACCAAGTA  
CTTCAGTAACCGCCCCGGGCCAACACCTGGATGCCAGCTCCCGGACCAAACTGTCCGGTGGAGGCATTA  
AAGGAACCGCGAATCCAACCGTGGCAACAAAGCGGAAAAGAGCAGAGGCCTTAGAACAAGGAATATTGC  
CCAAGAAGCTCATTTTT

**ACGCGT**ACGCGGCCGCTCGAG - GFP Tag - GTTTAA



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**Protein Sequence:** >MG204375 representing BC004605  
Red=Cloning site Green=Tags(s)

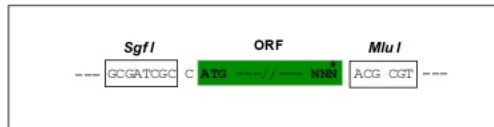
MAVDVKSRAKRYEKLDLFGEGQFATVYKARDKNTNQIVAIIKKIKLGRSEAKDGINRTALREIKLLQELS  
HPNIIGLLDAFGHKSNI SLVDFMETDLEDLKPNLLLLDENGVLKLADFLAKSFGSPNRAYTHQVVTRW  
YRAPELLFGARMYGVGVDMWAVGCILAELLRLVPFLPGDSDLQLTRIFETLGTPTEEQWPDMSLPDYV  
TFKSFPGVPLQHIFIAAGDDLLELIQGLFLFNPCTRTTASQALKTKYFSNRPGPTPGCQLPRPNCVPEAL  
KEPANPTVATKRKRAEALQGI LPKKLIF

TRTRPLE – GFP Tag – V

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**

Cloning sites used for ORF Shuttling:



CTATAGGGCGGCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCCGCCGCGATCGCCGCGCGCCAGATCT

EcoRI BamHI KpnI RBS Kozac Consensus SgfI AscI

CAAGCTTAAGCTAGCTAGCGGACCG ACG CGT ACG CGG CCG CTC GAG ATG GAG AGC GAC ---

HindIII NheI RsrII MluI NotI XhoI GFP Tag

T R T R P L E M E S D - - -

--- GAA GAA AGA GTT TAA ACGGCGGCGCGGAGCT

- - E E R V Stop

**ACCN:** BC004605

**ORF Size:** 927 bp

**OTI Disclaimer:** 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:**

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:** [BC004605](#), [AAH04605](#)

**RefSeq Size:** 1170 bp

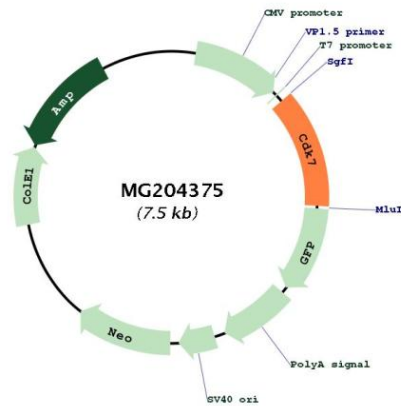
**RefSeq ORF:** 929 bp

**Locus ID:** 12572

**Cytogenetics:** 13 53.23 cM

**Gene Summary:** Serine/threonine kinase involved in cell cycle control and in RNA polymerase II-mediated RNA transcription. Cyclin-dependent kinases (CDKs) are activated by the binding to a cyclin and mediate the progression through the cell cycle. Each different complex controls a specific transition between 2 subsequent phases in the cell cycle. Required for both activation and complex formation of CDK1/cyclin-B during G2-M transition, and for activation of CDK2/cyclins during G1-S transition (but not complex formation). CDK7 is the catalytic subunit of the CDK-activating kinase (CAK) complex. Phosphorylates SPT5/SUPT5H, SF1/NR5A1, POLR2A, p53/TP53, CDK1, CDK2, CDK4, CDK6 and CDK11B/CDK11. CAK activates the cyclin-associated kinases CDK1, CDK2, CDK4 and CDK6 by threonine phosphorylation, thus regulating cell cycle progression. CAK complexed to the core-TFIIF basal transcription factor activates RNA polymerase II by serine phosphorylation of the repetitive C-terminal domain (CTD) of its large subunit (POLR2A), allowing its escape from the promoter and elongation of the transcripts. Phosphorylation of POLR2A in complex with DNA promotes transcription initiation by triggering dissociation from DNA. Its expression and activity are constant throughout the cell cycle. Upon DNA damage, triggers p53/TP53 activation by phosphorylation, but is inactivated in turn by p53/TP53; this feedback loop may lead to an arrest of the cell cycle and of the transcription, helping in cell recovery, or to apoptosis. Required for DNA-bound peptides-mediated transcription and cellular growth inhibition. [UniProtKB/Swiss-Prot Function]

## Product images:



Circular map for MG204375