

Product datasheet for **RN208902**

Cdk9 (NM_001007743) Rat Untagged Clone

Product data:

Product Type: Expression Plasmids
Product Name: Cdk9 (NM_001007743) Rat Untagged Clone
Tag: Tag Free
Symbol: Cdk9
Synonyms: MGC95175
Vector: pCMV6-Entry (PS100001)
E. coli Selection: Kanamycin (25 ug/mL)
Cell Selection: Neomycin
Fully Sequenced ORF: >RN208902 representing NM_001007743
Red=Cloning site **Blue**=ORF **Orange**=Stop codon

TTTTGTAATACGACTCACTATAGGGCGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**GCGATCGCC**

ATGGCCAAGCAGTACGACTCAGTGAATGCCGTTTTGCGATGAGGTCACCAAGTACGAGAACTTGCCA
AGATCGGCCAAGGCACATTCGGGAAGTATTTAAAGCCAAGCACCGTCAGACCGCCAGAAGGTGGCTCT
GAAGAAAGTGTGATGGAGAATGAGAAGGAGGGTTCCCCATCACAGCCTTGCGGAAATCAAGATTCTA
CAGCTCCTAAAGCACGAGAATGGTCAACCTGATTGAGATTTGTGAACCAAAGCTTACCCTATAACC
GCTGCAAAGGCAGCATCTATCTGGTGTTCGACTTCTGTGAGCATGACCTCGCTGGCTGCTGAGCAATGT
CTTAGTGAAGTTCACGTTGTCTGAGATCAAGAGAGTAATGCAGATGCTGCTGAATGGCCTCTACTACATC
CACAGGAACAAGATCCTGCACAGGGACATGAAGGCTGCCAACGTGCTCATTACCCGAGATGGGGTCTTAA
AGCTGGCAGATTTTGGGCTGGCTCGCGCCTTCAGCCTAGCTAAGAATAGCCAGCCCAACCGATACACCAA
CCGTGTGGTGACATTGTGGTACCGACCTCCGGAGCTCTGCTCGGAGAGCGGGACTACGGCCCGCCATT
GACCTGTGGGTGCTGGGTGCATCATGGCAGAGATGTGGACCCGACGCCCATCATGCAGGGCAACACAG
AGCAGCACCGACTTGCCTCATCAGCCAGCTCTGTGGCTCCATCACTCCAGAGGTGTGGCAAACGTGGA
CAAGTATGAGCTGTTGAAAAGCTGGAAGTGGTCAAGGGCCAGAAGCGGAAGGTGAAGGACCGTCTGAAG
GCCTACGTCGGGACCCCTATGCTCTGGACCTCATTGACAAGCTGCTGGTGTGGACCTGCACAGCGGA
TTGACAGTGATGATGCCCTCAACCATGACTTCTTCTGGTTCGGACCCCATGCCCTCGGACCTCAAGGGCAT
GCTGTCTACTCACTTGACGTCTATGTTTGGTACCTGGCCCCACCAGCAGGAAGGGTAGCCAGATCACC
CAGCAGTCCACCAACAGAGCCGAAATCCCGCCACTACCAACCAGACGGAATTTGAACGTGTCTT**TGA**

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Restriction Sites: SgfI-MluI
ACCN: NM_001007743



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Insert Size:	1119 bp
OTI Disclaimer:	<p>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.</p> <p>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).</p>
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:	<u>NM_001007743.1</u> , <u>NP_001007744.1</u>
RefSeq Size:	1699 bp
RefSeq ORF:	1119 bp
Locus ID:	362110
UniProt ID:	<u>Q641Z4</u>
Cytogenetics:	3p11

Gene Summary:

Protein kinase involved in the regulation of transcription. Member of the cyclin-dependent kinase pair (CDK9/cyclin-T) complex, also called positive transcription elongation factor b (P-TEFb), which facilitates the transition from abortive to productive elongation by phosphorylating the CTD (C-terminal domain) of the large subunit of RNA polymerase II (RNAP II) POLR2A, SUPT5H and RDBP. This complex is inactive when in the 7SK snRNP complex form. Phosphorylates EP300, MYOD1, RPB1/POLR2A and AR, and the negative elongation factors DSIF and NELF. Regulates cytokine inducible transcription networks by facilitating promoter recognition of target transcription factors (e.g. TNF-inducible RELA/p65 activation and IL-6-inducible STAT3 signaling). Promotes RNA synthesis in genetic programs for cell growth, differentiation and viral pathogenesis. P-TEFb is also involved in cotranscriptional histone modification, mRNA processing and mRNA export. Modulates a complex network of chromatin modifications including histone H2B monoubiquitination (H2Bub1), H3 lysine 4 trimethylation (H3K4me3) and H3K36me3; integrates phosphorylation during transcription with chromatin modifications to control co-transcriptional histone mRNA processing. The CDK9/cyclin-K complex has also a kinase activity towards CTD of RNAP II and can substitute for CDK9/cyclin-T P-TEFb in vitro. Replication stress response protein; the CDK9/cyclin-K complex is required for genome integrity maintenance, by promoting cell cycle recovery from replication arrest and limiting single-stranded DNA amount in response to replication stress, thus reducing the breakdown of stalled replication forks and avoiding DNA damage. In addition, probable function in DNA repair of isoform 2 via interaction with KU70/XRCC6. Promotes cardiac myocyte enlargement. RPB1/POLR2A phosphorylation on 'Ser-2' in CTD activates transcription. AR phosphorylation modulates AR transcription factor promoter selectivity and cell growth. DSIF and NELF phosphorylation promotes transcription by inhibiting their negative effect. The phosphorylation of MYOD1 enhances its transcriptional activity and thus promotes muscle differentiation.[UniProtKB/Swiss-Prot Function]