

## Recombinant Mouse Cdk7 Protein, MYC/DDK-tagged

**Cat. No.** Cdk7-868M    **Lot. No.** (See product label)

### SPECIFICATION

**Product Overview**      Purified recombinant protein of full-length mouse cyclin-dependent kinase 7 (homolog of *Xenopus* MO15 cdk-activating kinase) (cDNA clone MGC:6069 IMAGE:3585145),, with C-terminal MYC/DDK tag, was expressed in HEK293T cells.

**Species**      Mouse

**Source**      HEK293

**Description**      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

 Tel: 1-631-559-9269    1-516-512-3133

 Email: [info@creative-biomart.com](mailto:info@creative-biomart.com)     Fax: 1-631-938-8127

 45-1 Ramsey Road, Shirley, NY 11967, USA

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.

<b>Molecular Mass</b>	34.6 kDa
<b>Purity</b>	>80% as determined by SDS-PAGE and Coomassie blue staining
<b>Stability</b>	Stable for 12 months from the date of receipt of the product under proper storage and handling conditions. Avoid repeated freeze-thaw cycles.
<b>Storage</b>	Store at -80 centigrade after receiving vials.
<b>Concentration</b>	>50 µg/mL as determined by microplate BCA method
<b>Storage Buffer</b>	25 mM Tris.HCl, pH 7.3, 100 mM glycine, 10% glycerol.

## GENE INFORMATION

<b>Gene Name</b>	<a href="#">Cdk7 cyclin-dependent kinase 7 [ <i>Mus musculus</i> (house mouse) ]</a>
<b>Official Symbol</b>	<a href="#">Cdk7</a>
<b>Synonyms</b>	Cdk7; cyclin-dependent kinase 7; Crk4; Cdkn7; AI323415; AI528512; C230069N13; cyclin-dependent kinase 7; 39 kDa protein kinase; CAK; CDK-activating kinase; CR4 protein kinase; CRK4 PK (CDC2-related-kinase-4 protein kinase); P39 Mo15; TFIIH basal transcription factor complex kinase subunit; cell division protein kinase 7; cyclin-dependent kinase 7 (homolog of <i>Xenopus</i> MO15 cdk-activating kinase); protein-tyrosine kinase MPK-7; EC 2.7.11.22; EC 2.7.11.23

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Gene ID	12572
mRNA Refseq	NM_009874
Protein Refseq	NP_034004
UniProt ID	Q03147

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