

# CDK7 Antibody

Rabbit mAb

Catalog # AP90821

## Product Information

<b>Application</b>	WB
<b>Primary Accession</b>	<a href="#">P50613</a>
<b>Reactivity</b>	Human
<b>Clonality</b>	Monoclonal
<b>Other Names</b>	Cyclin-dependent kinase 7; p39 Mo15; CDK-activating kinase 1; Cell division protein kinase 7; CDK7; CAK; CAK1; CDKN7; MO15; STK1;
<b>Isotype</b>	Rabbit IgG
<b>Host</b>	Rabbit
<b>Calculated MW</b>	39038

## Additional Information

<b>Dilution</b>	WB 1:1000~1:2000
<b>Purification</b>	Affinity-chromatography
<b>Immunogen</b>	A synthesized peptide derived from human CDK7
<b>Description</b>	CDK-activating kinase (CAK) is a complex of CDK7 and cyclin H. The complex is involved in cell cycle regulation by phosphorylating an activating residue in the T-loop domain of cdk. Regulation of CAK activity is mediated by T-loop phosphorylation and by association with MAT1, both of which enhance its kinase activity toward the CTD of RNA polymerase II and other substrates such as p53.
<b>Storage Condition and Buffer</b>	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

## Protein Information

<b>Name</b>	CDK7
<b>Synonyms</b>	CAK, CAK1, CDKN7, MO15, STK1
<b>Function</b>	Serine/threonine kinase involved in cell cycle control and in RNA polymerase II-mediated RNA transcription (PubMed: <a href="#">9852112</a> , PubMed: <a href="#">19136461</a> , PubMed: <a href="#">26257281</a> , PubMed: <a href="#">28768201</a> ). 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 (PubMed:[9372954](#), PubMed:[9840937](#), PubMed:[19136461](#), PubMed:[26257281](#), PubMed:[28768201](#)). Initiates transcription by RNA polymerase II by mediating phosphorylation of POLR2A at 'Ser-5' of the repetitive C- terminal domain (CTD) when POLR2A is in complex with DNA, promoting dissociation from DNA and initiation (PubMed:[19136461](#), PubMed:[26257281](#), PubMed:[28768201](#)). 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 CTD of POLR2A, allowing its escape from the promoter and elongation of the transcripts (PubMed:[9852112](#)). 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.

#### Cellular Location

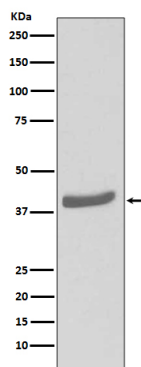
Nucleus. Cytoplasm. Cytoplasm, perinuclear region. Note=Colocalizes with PRKCI in the cytoplasm and nucleus (PubMed:15695176). Translocates from the nucleus to cytoplasm and perinuclear region in response to DNA-bound peptides (PubMed:19071173).

#### Tissue Location

Ubiquitous.

## Images

---



Western blot analysis of CDK7 expression in MCF-7 cell lysate.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.