

### **CDK7 Antibody**

Rabbit mAb Catalog # AP90821

# **Specification**

### **CDK7 Antibody - Product Information**

Application WB
Primary Accession P50613
Clonality Monoclonal

**Other Names** 

Cyclin-dependent kinase 7; p39 Mo15; CDK-activating kinase 1; Cell division protein kinase 7;

CDK7; CAK; CAK1; CDKN7; MO15; STK1;

Isotype Rabbit IgG
Host Rabbit
Calculated MW 39038 Da

# **CDK7 Antibody - Additional Information**

Dilution WB~~1:1000

Purification Affinity-chromatography

Immunogen A synthesized peptide derived from human

CDK7

Description 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 cdks. 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.

Storage Condition and Buffer 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.

#### **CDK7 Antibody - Protein Information**

Name CDK7

Synonyms CAK, CAK1, CDKN7, MO15, STK1

# **Function**

Serine/threonine kinase involved in cell cycle control and in RNA polymerase II-mediated RNA transcription (PubMed:<a href="http://www.uniprot.org/citations/9852112" target="\_blank">9852112</a>, PubMed:<a href="http://www.uniprot.org/citations/19136461"



target=" blank">19136461</a>, PubMed:<a href="http://www.uniprot.org/citations/26257281" target="blank">26257281</a>, PubMed:<a href="http://www.uniprot.org/citations/28768201" target="blank">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: <a href="http://www.uniprot.org/citations/9372954" target="\_blank">9372954</a>, PubMed:<a href="http://www.uniprot.org/citations/9840937" target="\_blank">9840937</a>, PubMed:<a href="http://www.uniprot.org/citations/19136461" target=" blank">19136461</a>, PubMed:<a href="http://www.uniprot.org/citations/26257281" target="blank">26257281</a>, PubMed:<a href="http://www.uniprot.org/citations/28768201" target="\_blank">28768201</a>). Initiates transcription by RNA polymerase II by mediating phosphory ation 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:<a href="http://www.uniprot.org/citations/19136461" target=" blank">19136461</a>, PubMed:<a href="http://www.uniprot.org/citations/26257281" target="blank">26257281</a>, PubMed:<a href="http://www.uniprot.org/citations/28768201" target="blank">28768201</a>). CAK activates the cyclin-associated kinases CDK1, CDK2, CDK4 and CDK6 by threonine phosphorylation, thus regulating cell cycle progression. CAK complexed to the core-TFIIH 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:<a href="http://www.uniprot.org/citations/9852112" target=" blank">9852112</a>). 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.

#### **CDK7 Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- <u>Immunofluorescence</u>
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

# CDK7 Antibody - Images



