

CDK7 Antibody (Center)
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7254c

Specification

CDK7 Antibody (Center) - Product Information

Application	WB,E
Primary Accession	P50613
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	39038

CDK7 Antibody (Center) - Additional Information

Gene ID 1022

Other Names

Cyclin-dependent kinase 7, 39 kDa protein kinase, p39 Mo15, CDK-activating kinase 1, Cell division protein kinase 7, Serine/threonine-protein kinase 1, TFIIF basal transcription factor complex kinase subunit, CDK7, CAK, CAK1, CDKN7, MO15, STK1

Target/Specificity

This CDK7 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide selected from the Center region of Human CDK7.

Dilution

WB~~~1:1000

E~~~Use at an assay dependent concentration.

Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

CDK7 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

CDK7 Antibody (Center) - 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:[9852112](#), PubMed:[19136461](#), PubMed:[26257281](#), PubMed:[28768201](#)). 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

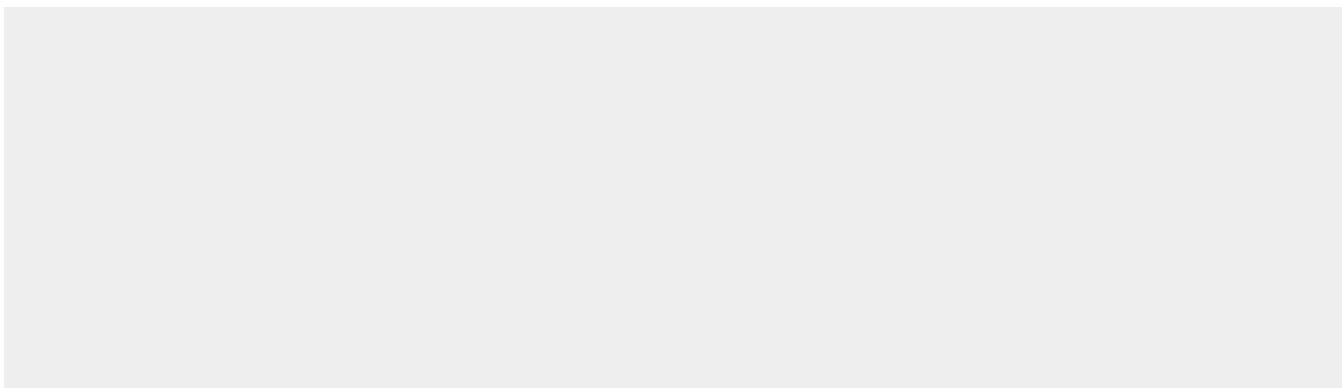
Ubiquitous.

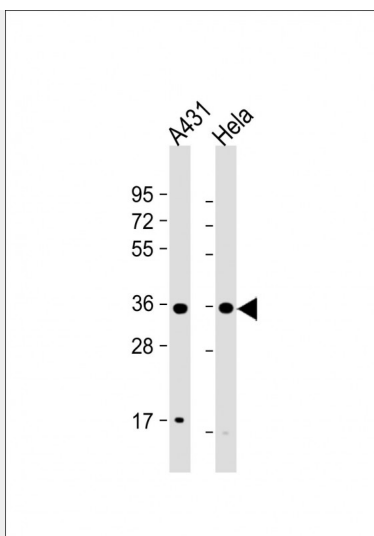
CDK7 Antibody (Center) - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

CDK7 Antibody (Center) - Images





All lanes : Anti-Cdk7 Antibody (T170) at 1:1000 dilution Lane 1: A431 whole cell lysate Lane 2: HeLa whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 39 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

CDK7 Antibody (Center) - Background

The protein encoded by this gene is a member of the cyclin-dependent protein kinase (CDK) family. CDK family members are highly similar to the gene products of *Saccharomyces cerevisiae* *cdc28*, and *Schizosaccharomyces pombe* *cdc2*, and are known to be important regulators of cell cycle progression. This protein forms a trimeric complex with cyclin H and MAT1, which functions as a Cdk-activating kinase (CAK). It is an essential component of the transcription factor TFIIH, that is involved in transcription initiation and DNA repair. This protein is thought to serve as a direct link between the regulation of transcription and the cell cycle.

CDK7 Antibody (Center) - References

- Zhou, M., et al., *Proc. Natl. Acad. Sci. U.S.A.* 100(22):12666-12671 (2003).
- Kino, T., et al., *Biochem. Biophys. Res. Commun.* 298(1):17-23 (2002).
- Schneider, E., et al., *Oncogene* 21(33):5031-5037 (2002).
- Nekhai, S., et al., *Virology* 266(2):246-256 (2000).
- Zhou, M., et al., *Mol. Cell. Biol.* 20(14):5077-5086 (2000).