

Anti-Cdk7 Antibody
Catalog # ABO11433**Specification**

Anti-Cdk7 Antibody - Product Information

Application	WB
Primary Accession	P50613
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

Description

Rabbit IgG polyclonal antibody for Cyclin-dependent kinase 7(CDK7) detection. Tested with WB in Human;Rat;Mouse.

Reconstitution

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-Cdk7 Antibody - Additional Information

Gene ID 1022

Other Names

Cyclin-dependent kinase 7, 2.7.11.22, 2.7.11.23, 39 kDa protein kinase, p39 Mo15, CDK-activating kinase 1, Cell division protein kinase 7, Serine/threonine-protein kinase 1, TFIIH basal transcription factor complex kinase subunit, CDK7, CAK, CAK1, CDKN7, MO15, STK1

Calculated MW

39038 MW KDa

Application Details

Western blot, 0.1-0.5 µg/ml, Human, Rat, Mouse

Subcellular Localization

Nucleus. Cytoplasm. Cytoplasm, perinuclear region. Colocalizes with PRKCI in the cytoplasm and nucleus. Translocates from the nucleus to cytoplasm and perinuclear region in response to DNA-bound peptides.

Tissue Specificity

Ubiquitous.

Protein Name

Cyclin-dependent kinase 7

Contents

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na₂HPO₄, 0.05mg Thimerosal, 0.05mg NaN₃.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human Cdk7(329-346aa

RKRTEALEQGGLPKKLIF), different from the related rat and mouse sequences by two amino acids.

Purification

Immunogen affinity purified.

Cross Reactivity

No cross reactivity with other proteins

Storage

At -20°C for one year. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for a longer time. Avoid repeated freezing and thawing.

Sequence Similarities

Belongs to the protein kinase superfamily. CMGC Ser/Thr protein kinase family. CDC2/CDKX subfamily.

Anti-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: [9852112](http://www.uniprot.org/citations/9852112)), PubMed: [19136461](http://www.uniprot.org/citations/19136461), PubMed: [26257281](http://www.uniprot.org/citations/26257281), PubMed: [28768201](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/9372954), PubMed: [9840937](http://www.uniprot.org/citations/9840937), PubMed: [19136461](http://www.uniprot.org/citations/19136461), PubMed: [26257281](http://www.uniprot.org/citations/26257281), PubMed: [28768201](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/19136461), PubMed: [26257281](http://www.uniprot.org/citations/26257281), PubMed: [28768201](http://www.uniprot.org/citations/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-TFIIB 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](http://www.uniprot.org/citations/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.

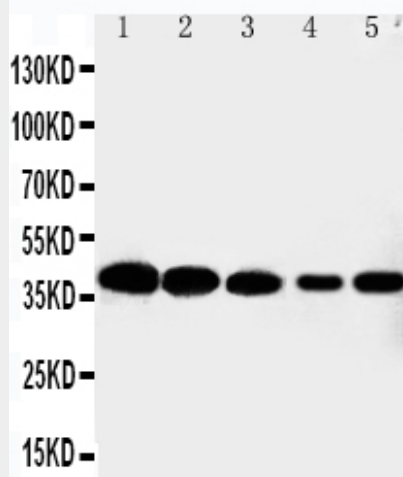
Anti-Cdk7 Antibody - Protocols

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](#)

Anti-Cdk7 Antibody - Images

Anti-Cdk7 antibody, ABO11433, Western blotting
Lane 1: Rat Testis Tissue Lysate
Lane 2: Rat Ovary Tissue Lysate



Anti-Cdk7 antibody, ABO11433, Western blotting
Lane 1: HELA Cell Lysate
Lane 2: MCF-7 Cell Lysate
Lane 3: A549 Cell Lysate
Lane 4: COLO320 Cell Lysate
Lane 5: JURKAT Cell Lysate

Anti-Cdk7 Antibody - Background

Cyclin-dependent kinase 7, also known as cell division protein kinase 7, is an enzyme that in humans is encoded by the CDK7 gene. The protein encoded by this gene is a member of the cyclin-dependent protein kinase(CDK) family. The gene was assigned to human chromosome 5q13.2. Serine/threonine kinase involved in cell cycle control and in RNA polymerase II-mediated RNA transcription. CDK7 is the catalytic subunit of the CDK-activating kinase(CAK) complex. It is required for DNA-bound peptides-mediated transcription and cellular growth inhibition.