

**CDK2 Antibody (T14)**  
**Affinity Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP7518d**

**Specification**

**CDK2 Antibody (T14) - Product Information**

Application	<b>WB, IHC-P,E</b>
Primary Accession	<a href="#">P24941</a>
Other Accession	<a href="#">Q80YP0</a> , <a href="#">Q00526</a> , <a href="#">P23437</a> , <a href="#">Q63699</a> , <a href="#">P97377</a> , <a href="#">Q55076</a> , <a href="#">Q5E9Y0</a>
Reactivity Predicted	<b>Human</b> <b>Bovine, Hamster,</b> <b>Mouse, Rat,</b> <b>Xenopus</b>
Host	<b>Rabbit</b>
Clonality	<b>Polyclonal</b>
Isotype	<b>Rabbit Ig</b>
Antigen Region	<b>1-30</b>

**CDK2 Antibody (T14) - Additional Information**

**Gene ID** 1017

**Other Names**

Cyclin-dependent kinase 2, Cell division protein kinase 2, p33 protein kinase, CDK2, CDKN2

**Target/Specificity**

This CDK2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1-30 amino acids from human CDK2.

**Dilution**

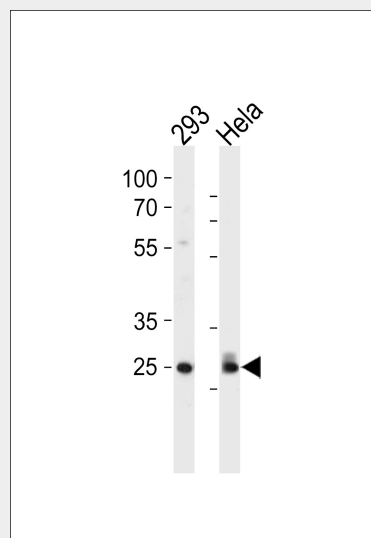
WB~~1:1000  
IHC-P~~1:10~50

**Format**

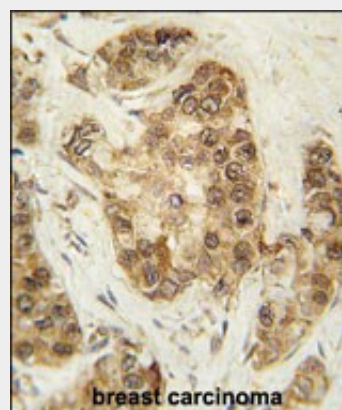
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

**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



Cdk2 Antibody (T14) (Cat. #AP7518d) western blot analysis in 293,HeLa cell line lysates (35ug/lane).This demonstrates the hCdk2 antibody detected the hCdk2 protein (arrow).



Formalin-fixed and paraffin-embedded human breast carcinoma tissue reacted with CDK2 Antibody (T14) (Cat.#AP7518d), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

cycles.

### Precautions

CDK2 Antibody (T14) is for research use only and not for use in diagnostic or therapeutic procedures.

### CDK2 Antibody (T14) - Protein Information

**Name** CDK2

**Synonyms** CDKN2

### Function

Serine/threonine-protein kinase involved in the control of the cell cycle; essential for meiosis, but dispensable for mitosis. Phosphorylates CTNNB1, USP37, p53/TP53, NPM1, CDK7, RB1, BRCA2, MYC, NPAT, EZH2. Triggers duplication of centrosomes and DNA. Acts at the G1-S transition to promote the E2F transcriptional program and the initiation of DNA synthesis, and modulates G2 progression; controls the timing of entry into mitosis/meiosis by controlling the subsequent activation of cyclin B/CDK1 by phosphorylation, and coordinates the activation of cyclin B/CDK1 at the centrosome and in the nucleus. Crucial role in orchestrating a fine balance between cellular proliferation, cell death, and DNA repair in human embryonic stem cells (hESCs). Activity of CDK2 is maximal during S phase and G2; activated by interaction with cyclin E during the early stages of DNA synthesis to permit G1-S transition, and subsequently activated by cyclin A2 (cyclin A1 in germ cells) during the late stages of DNA replication to drive the transition from S phase to mitosis, the G2 phase. EZH2 phosphorylation promotes H3K27me3 maintenance and epigenetic gene silencing. Phosphorylates CABLES1 (By similarity). Cyclin E/CDK2 prevents oxidative stress-mediated Ras-induced senescence by phosphorylating MYC. Involved in G1-S phase DNA damage checkpoint that prevents cells with damaged DNA from initiating mitosis; regulates homologous recombination-dependent repair by phosphorylating BRCA2, this phosphorylation is low in S phase when recombination is active, but increases as cells progress towards mitosis. In response to DNA damage, double-strand break repair

### CDK2 Antibody (T14) - Background

CDK2 is a member of the Ser/Thr protein kinase family. This protein kinase is highly similar to the gene products of *S. cerevisiae* cdc28, and *S. pombe* cdc2. It is a catalytic subunit of the cyclin-dependent protein kinase complex, whose activity is restricted to the G1-S phase, and essential for cell cycle G1/S phase transition. This protein associates with and is regulated by the regulatory subunits of the complex including cyclin A or E, CDK inhibitor p21Cip1 (CDKN1A) and p27Kip1 (CDKN1B). Its activity is also regulated by its protein phosphorylation.

### CDK2 Antibody (T14) - References

Moshinsky, D.J., et al., *Biochem. Biophys. Res. Commun.* 310(3):1026-1031 (2003).  
Chow, J.P., et al., *J. Biol. Chem.* 278(42):40815-40828 (2003).  
O'Nions, J., et al., *Oncogene* 22(46):7181-7191 (2003).  
Yun, J., et al., *J. Biol. Chem.* 278(38):36966-36972 (2003).  
Izumiya, Y., et al., *J. Virol.* 77(17):9652-9661 (2003).

by homologous recombination a reduction of CDK2-mediated BRCA2 phosphorylation. Phosphorylation of RB1 disturbs its interaction with E2F1. NPM1 phosphorylation by cyclin E/CDK2 promotes its dissociates from unduplicated centrosomes, thus initiating centrosome duplication. Cyclin E/CDK2-mediated phosphorylation of NPAT at G1-S transition and until prophase stimulates the NPAT-mediated activation of histone gene transcription during S phase. Required for vitamin D-mediated growth inhibition by being itself inactivated. Involved in the nitric oxide- (NO) mediated signaling in a nitrosylation/activation-dependent manner. USP37 is activated by phosphorylation and thus triggers G1-S transition. CTNNB1 phosphorylation regulates insulin internalization. Phosphorylates FOXP3 and negatively regulates its transcriptional activity and protein stability (By similarity). Phosphorylates CDK2AP2 (PubMed:<a href="http://www.uniprot.org/citations/12944431" target="\_blank">12944431</a>). Phosphorylates ERCC6 which is essential for its chromatin remodeling activity at DNA double-strand breaks (PubMed:<a href="http://www.uniprot.org/citations/29203878" target="\_blank">29203878</a>).

#### **Cellular Location**

Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Nucleus, Cajal body. Cytoplasm. Endosome  
Note=Localized at the centrosomes in late G2 phase after separation of the centrosomes but before the start of prophase. Nuclear-cytoplasmic trafficking is mediated during the inhibition by 1,25-(OH)(2)D(3)

#### **CDK2 Antibody (T14) - 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](#)

**CDK2 Antibody (T14) - Citations**

- [Targeting the overexpressed CREB inhibits esophageal squamous cell carcinoma cell growth.](#)