

Anti-Cdk2 Antibody
Catalog # ABO10864**Specification**

Anti-Cdk2 Antibody - Product Information

Application	WB
Primary Accession	P24941
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

Description

Rabbit IgG polyclonal antibody for Cyclin-dependent kinase 2(CDK2) detection. Tested with WB in Human;Mouse;Rat.

Reconstitution

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

Anti-Cdk2 Antibody - Additional Information

Gene ID 1017

Other Names

Cyclin-dependent kinase 2, 2.7.11.22, Cell division protein kinase 2, p33 protein kinase, CDK2, CDKN2

Calculated MW

33930 MW KDa

Application Details

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

Subcellular Localization

Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Nucleus, Cajal body. Cytoplasm. Endosome. 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).

Protein Name

Cyclin-dependent kinase 2

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 Cdk2(277-298aa AKAAALAHPPFFQDVTKPVPHLRL), identical to the related rat and mouse sequences.

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-Cdk2 Antibody - 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 (PubMed: [10499802](http://www.uniprot.org/citations/10499802) target="_blank">10499802, PubMed: [10884347](http://www.uniprot.org/citations/10884347) target="_blank">10884347, PubMed: [10995386](http://www.uniprot.org/citations/10995386) target="_blank">10995386, PubMed: [10995387](http://www.uniprot.org/citations/10995387) target="_blank">10995387, PubMed: [11051553](http://www.uniprot.org/citations/11051553) target="_blank">11051553, PubMed: [11113184](http://www.uniprot.org/citations/11113184) target="_blank">11113184, PubMed: [12944431](http://www.uniprot.org/citations/12944431) target="_blank">12944431, PubMed: [15800615](http://www.uniprot.org/citations/15800615) target="_blank">15800615, PubMed: [17495531](http://www.uniprot.org/citations/17495531) target="_blank">17495531, PubMed: [19966300](http://www.uniprot.org/citations/19966300) target="_blank">19966300, PubMed: [20935635](http://www.uniprot.org/citations/20935635) target="_blank">20935635, PubMed: [21262353](http://www.uniprot.org/citations/21262353) target="_blank">21262353, PubMed: [21596315](http://www.uniprot.org/citations/21596315) target="_blank">21596315, PubMed: [28216226](http://www.uniprot.org/citations/28216226) target="_blank">28216226, PubMed: [28666995](http://www.uniprot.org/citations/28666995) target="_blank">28666995). Phosphorylates CABLES1, CTNNB1, CDK2AP2, ERCC6, NBN, USP37, p53/TP53, NPM1, CDK7, RB1, BRCA2, MYC, NPAT, EZH2 (PubMed: [10499802](http://www.uniprot.org/citations/10499802) target="_blank">10499802, PubMed: [10995386](http://www.uniprot.org/citations/10995386) target="_blank">10995386, PubMed: [10995387](http://www.uniprot.org/citations/10995387) target="_blank">10995387, PubMed: [11051553](http://www.uniprot.org/citations/11051553) target="_blank">11051553, PubMed: [11113184](http://www.uniprot.org/citations/11113184) target="_blank">11113184, PubMed: [12944431](http://www.uniprot.org/citations/12944431) target="_blank">12944431, PubMed: [15800615](http://www.uniprot.org/citations/15800615) target="_blank">15800615, PubMed: [19966300](http://www.uniprot.org/citations/19966300) target="_blank">19966300, PubMed: [20935635](http://www.uniprot.org/citations/20935635) target="_blank">20935635, PubMed: [21262353](http://www.uniprot.org/citations/21262353) target="_blank">21262353, PubMed: [21596315](http://www.uniprot.org/citations/21596315) target="_blank">21596315, PubMed: [28216226](http://www.uniprot.org/citations/28216226) target="_blank">28216226). Triggers duplication of centrosomes and DNA (PubMed: [11051553](http://www.uniprot.org/citations/11051553) target="_blank">11051553). 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 (PubMed:18372919, PubMed:19238148, PubMed:19561645). Crucial role in orchestrating a fine balance between cellular proliferation, cell death, and DNA repair in embryonic stem cells (ESCs) (PubMed:18372919, PubMed:19238148, PubMed:19561645). 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 (PubMed:18372919, PubMed:19238148, PubMed:19561645). EZH2 phosphorylation promotes H3K27me3 maintenance and epigenetic gene silencing (PubMed:20935635). Cyclin E/CDK2 prevents oxidative stress- mediated Ras-induced senescence by phosphorylating MYC (PubMed:19966300). 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 (PubMed:15800615, PubMed:20195506, PubMed:21319273). In response to DNA damage, double- strand break repair by homologous recombination a reduction of CDK2- mediated BRCA2 phosphorylation (PubMed:15800615). Involved in regulation of telomere repair by mediating phosphorylation of NBN (PubMed:28216226). Phosphorylation of RB1 disturbs its interaction with E2F1 (PubMed:10499802). NPM1 phosphorylation by cyclin E/CDK2 promotes its dissociates from unduplicated centrosomes, thus initiating centrosome duplication (PubMed:11051553). 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 (PubMed:10995386, PubMed:10995387). Required for vitamin D-mediated growth inhibition by being itself inactivated (PubMed:20147522). Involved in the nitric oxide- (NO) mediated signaling in a nitrosylation/activation-dependent manner (PubMed:20079829). USP37 is activated by phosphorylation and thus triggers G1-S transition (PubMed:21596315). CTNNB1 phosphorylation regulates insulin internalization (PubMed:21262353). Phosphorylates FOXP3 and negatively regulates its transcriptional activity and protein stability (By similarity). Phosphorylates ERCC6 which is essential for its chromatin remodeling activity at DNA double-strand breaks (PubMed:29203878). Acts as a regulator of the phosphatidylinositol 3- kinase/protein kinase B signal transduction by mediating phosphorylation of the C-terminus of protein kinase B (PKB/AKT1 and PKB/AKT2), promoting its activation (PubMed:24670654).

Cellular Location

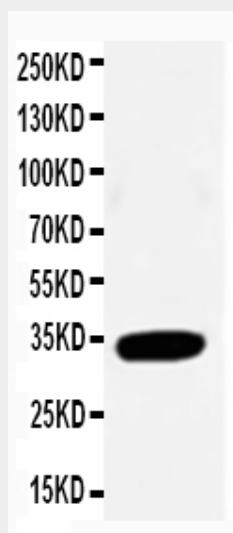
Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Nucleus, Cajal body.
Cytoplasm. Endosome Note=Localized at the centrosomes in late G2 phase after separation of the centrosomes but before the start of prophase. Nuclear-cytoplasmic trafficking is mediated during the inhibition by 1,25-(OH)(2)D(3)

Anti-Cdk2 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-Cdk2 Antibody - Images



Anti-Cdk2 antibody, ABO10864, Western blottingAll lanes: Anti Cdk2 (ABO10864) at 0.5ug/mlWB: JURKAT Whole Cell Lysate at 40ugPredicted bind size: 34KDObserved bind size: 34KD

Anti-Cdk2 Antibody - Background

CDK2, Cyclin-Dependent Kinase2, is also known as P33. The CDK2 protein was highly homologous to p34(CDC2) kinase and more significantly homologous to Xenopus Eg1 kinase, suggesting that CDK2 is the human homolog of Eg1. The CDK2 gene is mapped to 12q13, the same region to which the CDK4 gene maps. Human cyclin A binds independently to 2 kinases, p34(cdc2) or p33. In adenovirus-transformed cells, the viral E1A oncoprotein seems to associate with p33/cyclin A but not with p34(cdc2)/cyclin A. The gene for p33 shares 65% sequence identity with p34(cdc2). P33(cdk2) plays a unique role in cell cycle regulation of vertebrate cells.