

**Mouse Cdk2 Antibody (C-term) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP16161b****Specification**

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**Mouse Cdk2 Antibody (C-term) Blocking Peptide - Product Information**Primary Accession [P97377](#)**Mouse Cdk2 Antibody (C-term) Blocking Peptide - Additional Information****Gene ID** 12566**Other Names**

Cyclin-dependent kinase 2, Cell division protein kinase 2, Cdk2, Cdkn2

**Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

**Mouse Cdk2 Antibody (C-term) Blocking Peptide - 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 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 (PubMed:<a href="http://www.uniprot.org/citations/23853094" target="\_blank">23853094</a>). Phosphorylates CDK2AP2 (By similarity). Phosphorylates ERCC6 which is essential for its chromatin remodeling activity at DNA double-strand breaks (By similarity).

**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) (By similarity)

**Mouse Cdk2 Antibody (C-term) Blocking Peptide - Protocols**

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

- [Blocking Peptides](#)

**Mouse Cdk2 Antibody (C-term) Blocking Peptide - Images****Mouse Cdk2 Antibody (C-term) Blocking Peptide - Background**

Cdk2 is involved in the control of the cell cycle. Interacts with cyclins A, B1, B3, D, or E. Activity of CDK2 is maximal during S phase and G2 (By similarity).

**Mouse Cdk2 Antibody (C-term) Blocking Peptide - References**

Puyol, M., et al. Cancer Cell 18(1):63-73(2010)Hodeify, R., et al. Am. J. Physiol. Renal Physiol. 299 (1), F112-F120 (2010) :Risley, M.D., et al. Dev. Biol. 342(2):146-156(2010)Copeland, N.A., et al. J. Cell. Sci. 123 (PT 7), 1108-1115 (2010) :Koledova, Z., et al. Stem Cells 28(3):450-461(2010)