

## ARG41140 anti-CDK2 antibody

Package: 100 µl  
Store at: -20°C

### Summary

|                     |   |
|---------------------|---|
| Product Description | Rabbit Polyclonal antibody recognizes CDK2  |
| Tested Reactivity   | Hu, Ms, Rat   |
| Tested Application  | ICC/IF, IHC-P, IP, WB   |
| Host                | Rabbit  |
| Clonality           | Polyclonal  |
| Isotype             | IgG   |
| Target Name         | CDK2  |
| Species             | Human   |
| Immunogen           | Synthetic peptide derived from Human CDK2.  |
| Conjugation         | Un-conjugated   |
| Alternate Names     | p33 protein kinase; Cell division protein kinase 2; p33(CDK2); CDKN2; EC 2.7.11.22; Cyclin-dependent kinase 2 |

### Application Instructions

| Application table | Application  | Dilution       |
|-------------------|--|----------------|
|                   | ICC/IF   | 1:50 - 1:200   |
|                   | IHC-P  | 1:50 - 1:100   |
|                   | IP   | 1:30           |
|                   | WB   | 1:500 - 1:1000 |
| Application Note  | * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist. |                |
| Positive Control  | HeLa   |                |

### Properties

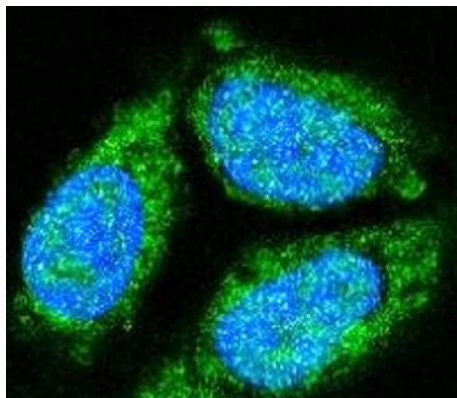
|                     |   |
|---------------------|---|
| Form                | Liquid  |
| Purification        | Affinity purified.  |
| Buffer              | PBS (pH 7.4), 150 mM NaCl, 0.02% Sodium azide and 50% Glycerol.   |
| Preservative        | 0.02% Sodium azide  |
| Stabilizer          | 50% Glycerol  |
| Storage instruction | For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use. |

Note For laboratory research only, not for drug, diagnostic or other use.

## Bioinformation

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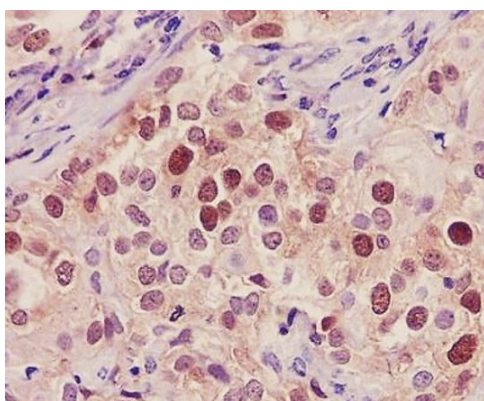
|                       |  |
|-----------------------|--|
| Gene Symbol           | CDK2   |
| Gene Full Name        | cyclin-dependent kinase 2  |
| Background            | This gene encodes a member of a family of serine/threonine protein kinases that participate in cell cycle regulation. The encoded protein is the catalytic subunit of the cyclin-dependent protein kinase complex, which regulates progression through the cell cycle. Activity of this protein is especially critical during the G1 to S phase transition. This protein associates with and regulated by other subunits of the complex including cyclin A or E, CDK inhibitor p21Cip1 (CDKN1A), and p27Kip1 (CDKN1B). Alternative splicing results in multiple transcript variants. [provided by RefSeq, Mar 2014]  |
| 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. Interacts with cyclins A, B1, B3, D, or E. 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 FOXF3 and negatively regulates its transcriptional activity and protein stability (By similarity). [UniProt] |
| Calculated Mw         | 34 kDa   |
| PTM                   | Phosphorylated at Thr-160 by CDK7 in a CAK complex. Phosphorylation at Thr-160 promotes kinase activity, whereas phosphorylation at Tyr-15 by WEE1 reduces slightly kinase activity. Phosphorylated on Thr-14 and Tyr-15 during S and G2 phases before being dephosphorylated by CDC25A.<br><br>Nitrosylated after treatment with nitric oxide (DETA-NO). [UniProt]  |
| Cellular Localization | 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). [UniProt]  |



ARG41140 anti-CDK2 antibody ICC/IF image

Immunofluorescence: HeLa cells stained with ARG41140 anti-CDK2 antibody.

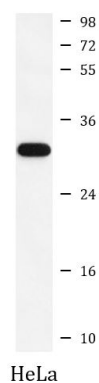
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ARG41140 anti-CDK2 antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Human breast carcinoma stained with ARG41140 anti-CDK2 antibody.

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ARG41140 anti-CDK2 antibody WB image

Western blot: HeLa cell lysate stained with ARG41140 anti-CDK2 antibody.

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