Datasheet for ABIN7127684

Recombinant anti-CDK2 antibody (pTyr15)

3 Images

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Overview

Quantity:	100 µL
Target:	CDK2
Binding Specificity:	pTyr15
Reactivity:	Human
Host:	Rabbit
Antibody Type:	Recombinant Antibody
Clonality:	Monoclonal
Conjugate:	This CDK2 antibody is un-conjugated
Application:	Western Blotting (WB), Immunohistochemistry (IHC), ELISA, Immunoprecipitation (IP)

Product Details

Immunogen:	A synthesized peptide derived from human Phospho-CDK2 (Y15)
Clone:	2C4
Isotype:	IgG
Cross-Reactivity:	Human
Purification:	Affinity-chromatography

Target Details

Target:	CDK2
Alternative Name:	CDK2 (CDK2 Products)

Target Details

Background:	Background: 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 (By similarity). Phosphorylates CDK2AP2 (PubMed:12944431). Aliases: Cyclin-dependent kinase 2, Cell division protein kinase 2, p33 protein kinase, CDK2, CDKN2
UniProt:	P24941
Pathways:	PI3K-Akt Signaling, Cell Division Cycle, Mitotic G1-G1/S Phases, DNA Replication, M Phase, Synthesis of DNA

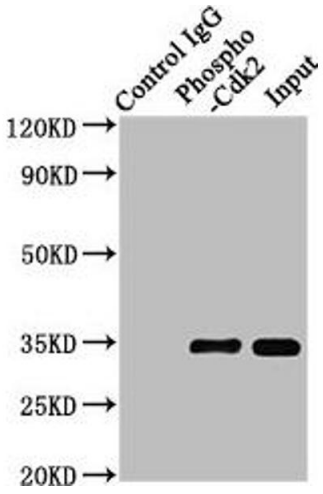
Application Details

Application Notes:	Recommended dilution: WB:1:500-1:5000, IHC:1:50-1:200, IP:1:200-1:1000,
Restrictions:	For Research Use only

Handling

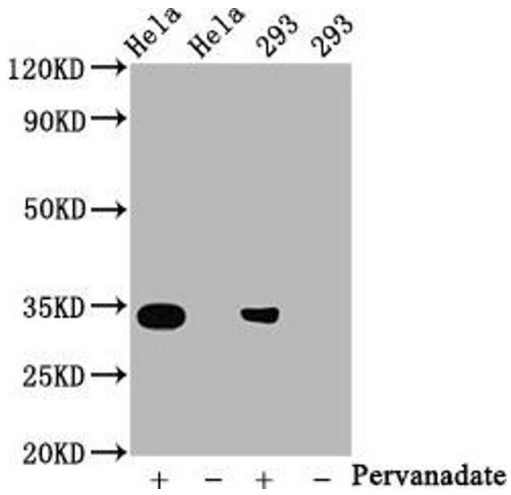
Format:	Liquid
Buffer:	Rabbit IgG in phosphate buffered saline , pH 7.4, 150 mM NaCl, 0.02 % sodium azide and 50 % glycerol.
Preservative:	Sodium azide
Precaution of Use:	This product contains Sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.
Storage:	-20 °C,-80 °C
Storage Comment:	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.

Images



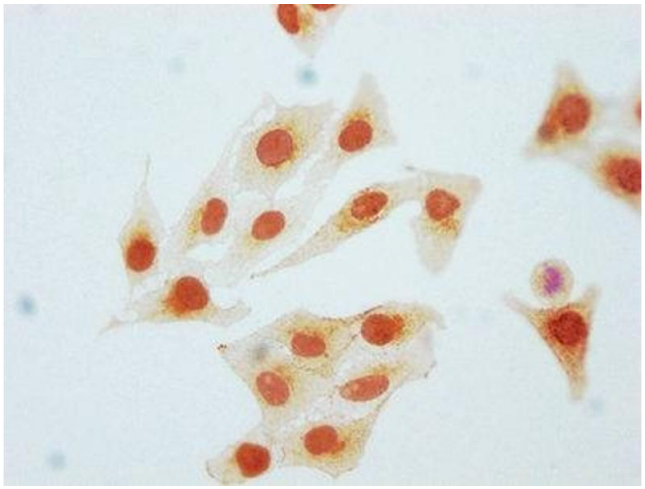
Western Blotting

Image 1. Immunoprecipitating Phospho-CDK2 in Hela whole cell lysate treated with Pervanadate Lane 1: Rabbit control IgG(1 µg)instead of ABIN7127684 in Hela whole cell lysate treated with Pervanadate.For western blotting,a HRP-conjugated Protein G antibody was used as the secondary antibody (1/2000) Lane 2: ABIN7127684(3 µg)+ Hela whole cell lysate treated with Pervanadate(1 mg) Lane 3: Hela whole cell lysate treated with Pervanadate(20 µg)



Western Blotting

Image 2. Western Blot Positive WB detected in:Hela whole cell lysate, 293 whole cell lysate(treated with Pervanadate or not) All lanes:Phospho-CDK2 antibody at 0.8 µg/mL Secondary Goat polyclonal to rabbit IgG at 1/50000 dilution Predicted band size: 34 KDa Observed band size: 34 KDa



Immunocytochemistry

Image 3. Immunocytochemistry analysis of ABIN7127684 diluted at 1:80 and staining in Hela cells(treated with Pervanadate) performed on a Leica BondTM system. The cells were fixed in 4 % formaldehyde, permeabilized using 0.2 % Triton X-100 and blocked with 10 % normal goat serum 30 min at RT. Then primary antibody (1 % BSA) was incubated at 4 °C overnight. The primary is detected by a biotinylated secondary antibody and visualized using an HRP conjugated SP system.