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CDK4 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7520B

Product Information

Application	IF, WB, IHC-P, FC, E
Primary Accession	P11802
Reactivity	Human
Predicted	Rat, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB03154
Calculated MW	33730
Antigen Region	273-305

Additional Information

Gene ID	1019
Other Names	Cyclin-dependent kinase 4, Cell division protein kinase 4, PSK-J3, CDK4
Target/Specificity	This CDK4 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 273-305 amino acids from the C-terminal region of human CDK4.
Dilution	IF~~1:10~50 WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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 cycles.
Precautions	CDK4 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CDK4 {ECO:0000303|PubMed:7652577, ECO:0000312|HGNC:HGNC:1773}
Function	Ser/Thr-kinase component of cyclin D-CDK4 (DC) complexes that phosphorylate and inhibit members of the retinoblastoma (RB) protein family including RB1 and regulate the cell-cycle during G(1)/S transition.

	Phosphorylation of RB1 allows dissociation of the transcription factor E2F from the RB/E2F complexes and the subsequent transcription of E2F target genes which are responsible for the progression through the G(1) phase. Hypophosphorylates RB1 in early G(1) phase. Cyclin D-CDK4 complexes are major integrators of various mitogenenic and antimitogenic signals. Also phosphorylates SMAD3 in a cell-cycle-dependent manner and represses its transcriptional activity. Component of the ternary complex, cyclin D/CDK4/CDKN1B, required for nuclear translocation and activity of the cyclin D-CDK4 complex.
Cellular Location	Cytoplasm. Nucleus. Nucleus membrane. Note=Cytoplasmic when non-complexed Forms a cyclin D-CDK4 complex in the cytoplasm as cells progress through G(1) phase. The complex accumulates on the nuclear membrane and enters the nucleus on transition from G(1) to S phase. Also present in nucleoli and heterochromatin lumps. Colocalizes with RB1 after release into the nucleus.

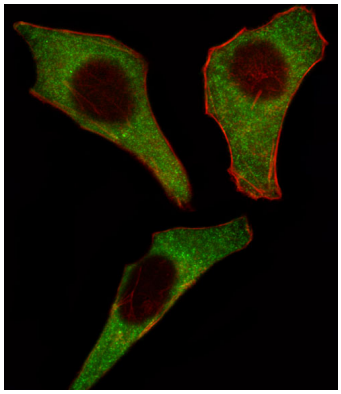
Background

CDK4 is a member of the Ser/Thr protein kinase family. This protein is highly similar to the gene products of S. cerevisiae cdc28 and S. pombe cdc2. It is a catalytic subunit of the protein kinase complex that is important for cell cycle G1 phase progression. The activity of this kinase is restricted to the G1-S phase, which is controlled by the regulatory subunits D-type cyclins and CDK inhibitor p16(INK4a). This kinase was shown to be responsible for the phosphorylation of retinoblastoma gene product (Rb). Mutations in this gene as well as in its related proteins including D-type cyclins, p16(INK4a) and Rb were all found to be associated with tumorigenesis of a variety of cancers. Multiple polyadenylation sites of the gene have been reported.

References

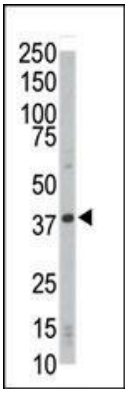
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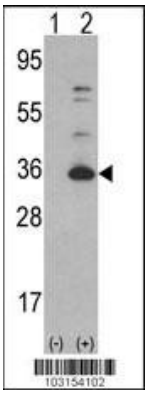
Images



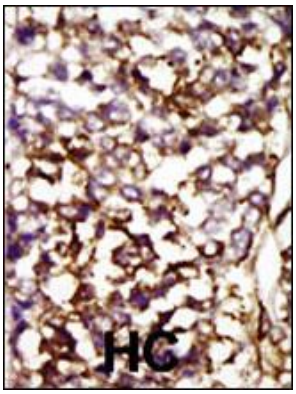
Fluorescent image of Hela cell stained with CDK4 Antibody (C-term)(Cat#AP7520b).Hela cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with CDK4 primary antibody (1:25, 1 h at 37°C). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37°C).Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37°C).CDK4 immunoreactivity is localized to Cytoplasm significantly.

Western blot analysis of anti-CDK4 Pab (Cat. #AP7520b) in HL-60 cell lysate. CDK4 (arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.

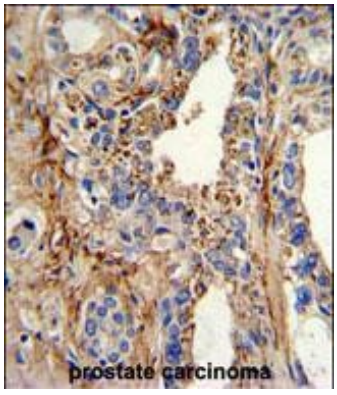




Western blot analysis of CDK4 (arrow) using rabbit polyclonal CDK4 Antibody (C-term) (Cat. #AP7520b). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the CDK4 gene (Lane 2) (Origene Technologies).

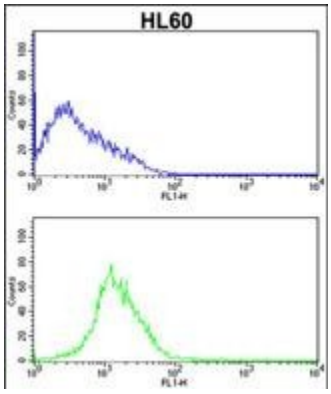


Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



Formalin-fixed and paraffin-embedded human prostate carcinoma with CDK4 Antibody (C-term), 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.

CDK4 Antibody (C-term) (Cat. #AP7520b) flow cytometric analysis of HL60 cells (bottom histogram) compared to a negative control cell (top histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.



Citations

- Selective activation of tumor-suppressive MAPKP signaling pathway by triptonide effectively inhibits pancreatic cancer cell tumorigenicity and tumor growth.
- Brk/Protein Tyrosine Kinase 6 Phosphorylates p27KIP1, Regulating the Activity of Cyclin D-Cyclin-Dependent Kinase 4.
- Combination of metformin and sorafenib suppresses proliferation and induces autophagy of hepatocellular carcinoma via targeting the mTOR pathway.
- Metformin inhibits proliferation and enhances chemosensitivity of intrahepatic cholangiocarcinoma cell lines.

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