

Product datasheet

Anti-Cdk4 antibody ab137675

★★★★★ 1 Abreviews 56 References 8 Images

Overview

Product name	Anti-Cdk4 antibody
Description	Rabbit polyclonal to Cdk4
Host species	Rabbit
Tested applications	Suitable for: WB, ICC/IF, IHC-P
Species reactivity	Reacts with: Mouse, Rat, Human Predicted to work with: Pig 
Immunogen	Recombinant fragment corresponding to Human Cdk4 aa 148-303. Database link: P11802
Positive control	WB: NIH/3T3, HEK-293T, HeLa, PC-12 whole cell lysates. Epithelial OVCAR whole cell lysate. ICC/IF: HeLa and MCF7 cells. IHC-P: Human gastric carcinoma tissue.
General notes	<p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As</p>

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.00 Preservative: 0.025% Proclin 300 Constituents: 79% PBS, 20% Glycerol (glycerin, glycerine)
Purity	Immunogen affinity purified
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our [Abpromise guarantee](#) covers the use of ab137675 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB	★★★★★ (1)	1/500 - 1/3000. Predicted molecular weight: 34 kDa.
ICC/IF		1/100 - 1/1000.
IHC-P		1/100 - 1/1000.

Target

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 mitogenic 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.

Involvement in disease

Defects in CDK4 are a cause of susceptibility to cutaneous malignant melanoma type 3 (CMM3) [MIM:609048]. Malignant melanoma is a malignant neoplasm of melanocytes, arising de novo or from a pre-existing benign nevus, which occurs most often in the skin but also may involve other sites.

Sequence similarities

Belongs to the protein kinase superfamily. CMGC Ser/Thr protein kinase family. CDC2/CDKX subfamily.
Contains 1 protein kinase domain.

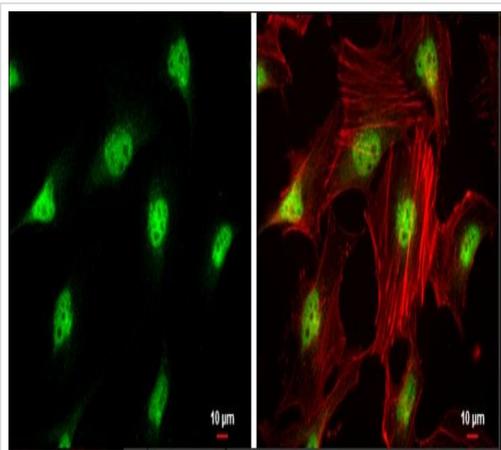
Post-translational modifications

Phosphorylation at Thr-172 is required for enzymatic activity. Phosphorylated, in vitro, at this site by CCNH-CDK7, but, in vivo, appears to be phosphorylated by a proline-directed kinase. In the cyclin D-CDK4-CDKN1B complex, this phosphorylation and consequent CDK4 enzyme activity, is dependent on the tyrosine phosphorylation state of CDKN1B. Thus, in proliferating cells, CDK4 within the complex is phosphorylated on Thr-172 in the T-loop. In resting cells, phosphorylation on Thr-172 is prevented by the non-tyrosine-phosphorylated form of CDKN1B.

Cellular localization

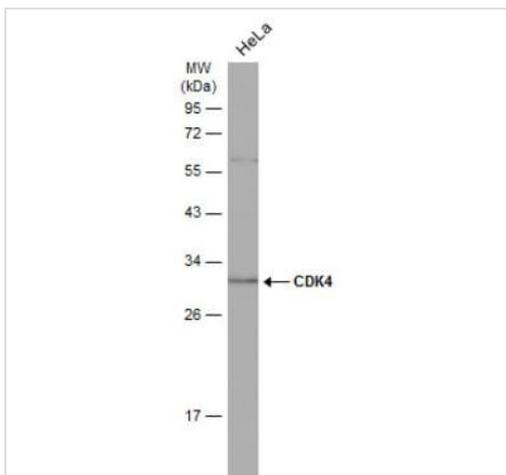
Cytoplasm. Nucleus. Membrane. Cytoplasmic when non-complexed. Forms a cyclin D-CDK4 complex in the cytoplasm as cells progress through G(1) phase. The complex accumulates on the nuclear membrane and enters the nucleus on transition from G(1) to S phase. Also present in nucleoli and heterochromatin lumps. Colocalizes with RB1 after release into the nucleus.

Images



HeLa cells stained for CDK4 (green) using ab137675 at 1/500 dilution in ICC/IF.

Immunocytochemistry/ Immunofluorescence - Anti-Cdk4 antibody (ab137675)

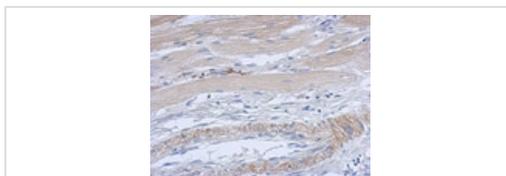


Anti-Cdk4 antibody (ab137675) at 1/1000 dilution + HeLa whole cell extract at 30 μg

Predicted band size: 34 kDa

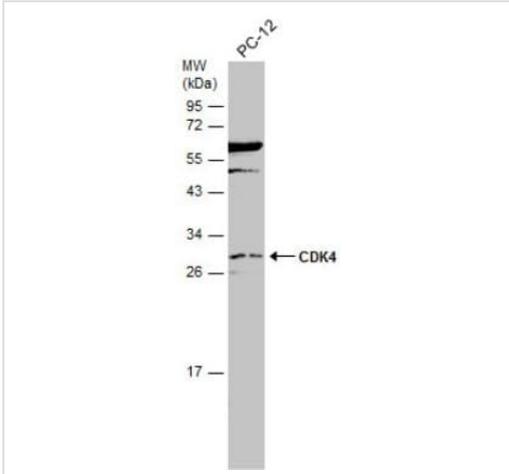
12% SDS-PAGE

Western blot - Anti-Cdk4 antibody (ab137675)



Immunohistochemical analysis of paraffin-embedded Human gastric carcinoma tissue, labelling Cdk4 using ab137675 at 1/500 dilution.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cdk4 antibody (ab137675)

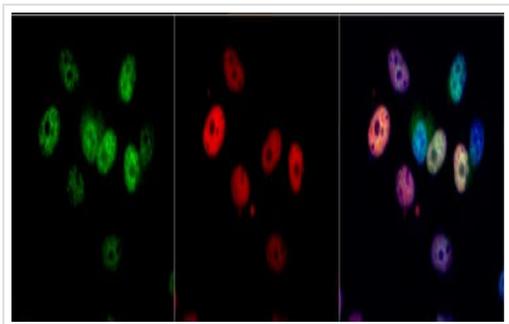


Western blot - Anti-Cdk4 antibody (ab137675)

Anti-Cdk4 antibody (ab137675) at 1/500 dilution + PC-12 whole cell extract at 30 μ g

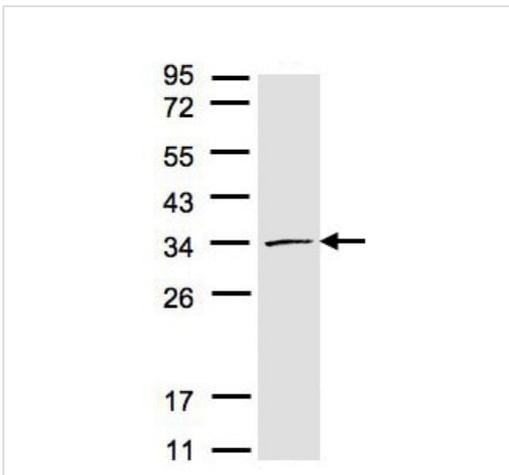
Predicted band size: 34 kDa

12% SDS-PAGE



Immunocytochemistry/ Immunofluorescence - Anti-Cdk4 antibody (ab137675)

MCF7 cells stained for CDK4 (green) using ab137675 at 1/1000 dilution in ICC/IF. Red staining of p21 Cip1 (a nucleus marker) at 1/500 dilution and Hoechst 33342 (blue) staining.

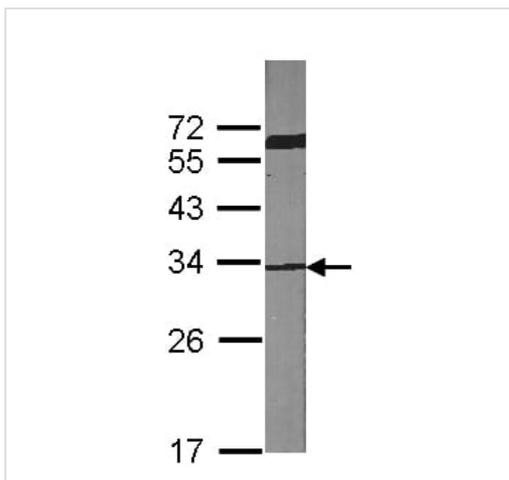


Western blot - Anti-Cdk4 antibody (ab137675)

Anti-Cdk4 antibody (ab137675) at 1/1000 dilution + HEK-293T whole cell lysate at 30 μ g

Predicted band size: 34 kDa

12% SDS PAGE

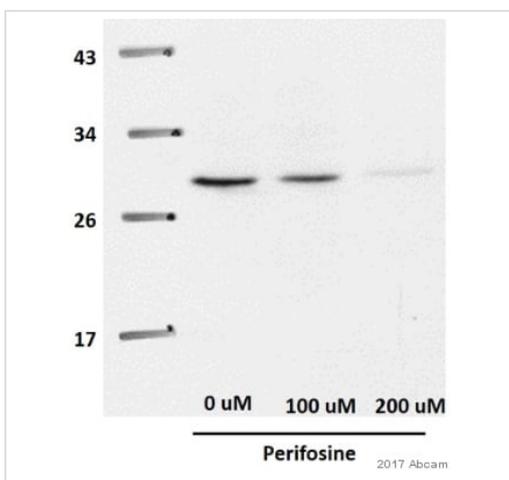


Western blot - Anti-Cdk4 antibody (ab137675)

Anti-Cdk4 antibody (ab137675) at 1/1000 dilution + NIH/3T3 whole cell lysate at 30 µg

Predicted band size: 34 kDa

12% SDS PAGE



Western blot - Anti-Cdk4 antibody (ab137675)

This image is courtesy of an anonymous Abreview.

All lanes : Anti-Cdk4 antibody (ab137675) at 1/1000 dilution

Lane 1 : Epithelial OVCAR whole cell lysate - untreated

Lane 2 : Epithelial OVCAR whole cell lysate treated with 100µM Perifosine for 24 hours

Lane 3 : Epithelial OVCAR whole cell lysate treated with 200µM Perifosine for 24 hours

Lysates/proteins at 100 µg per lane.

Secondary

All lanes : HRP-conjugated goat anti-rabbit IgG at 1/10000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 34 kDa

Observed band size: 30 kDa

Exposure time: 5 minutes

10% SDS-PAGE.

Blocked with 5% milk for 12 hours at 4°C.

Incubated with the primary antibody in 2% milk for 12 hours at 4°C.

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