

Cdk4 (B-10): sc-166373

BACKGROUND

Cell cycle progression is controlled in part by a family of cyclin proteins and cyclin dependent kinases (Cdks). Cdk proteins work in concert with the cyclins to phosphorylate key substrates involved in each phase of cell cycle progression. Another family of proteins, Cdk inhibitors, also plays a role in regulating the cell cycle by binding to cyclin-Cdk complexes and modulating their activity. Several Cdk proteins have been identified, including Cdk2-Cdk8, PCTAIRE-1-PCTAIRE-3, PITALRE and PITSLRE. Cdk4, in complex with D-type cyclins, is thought to regulate cell growth during the G₁ phase of the cell cycle. This association with a D-type cyclin upregulates Cdk4 activity, whereas binding to the Cdk inhibitor p16 downregulates Cdk4 activity. Activation of the Cdk4-cyclin complexes requires phosphorylation on a single threonyl residue of Cdk4, catalyzed by a Cdk-activating protein (CAK).

CHROMOSOMAL LOCATION

Genetic locus: CDK4 (human) mapping to 12q14.1; Cdk4 (mouse) mapping to 10 D3.

SOURCE

Cdk4 (B-10) is a mouse monoclonal antibody raised against amino acids 1-303 representing full length Cdk4 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cdk4 (B-10) is available conjugated to agarose (sc-166373 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166373 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166373 PE), fluorescein (sc-166373 FITC), Alexa Fluor® 488 (sc-166373 AF488), Alexa Fluor® 546 (sc-166373 AF546), Alexa Fluor® 594 (sc-166373 AF594) or Alexa Fluor® 647 (sc-166373 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166373 AF680) or Alexa Fluor® 790 (sc-166373 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Cdk4 (B-10) is recommended for detection of Cdk4 p34 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Cdk4 siRNA (h): sc-29261, Cdk4 siRNA (m): sc-29262, Cdk4 shRNA Plasmid (h): sc-29261-SH, Cdk4 shRNA Plasmid (m): sc-29262-SH, Cdk4 shRNA (h) Lentiviral Particles: sc-29261-V and Cdk4 shRNA (m) Lentiviral Particles: sc-29262-V.

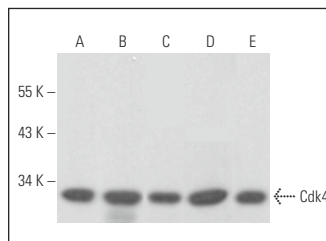
Molecular Weight of Cdk4: 34 kDa.

Positive Controls: Hs68 cell lysate: sc-2230, Raji whole cell lysate: sc-364236 or NIH/3T3 nuclear extract: sc-2138.

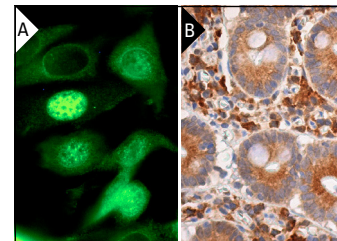
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



Cdk4 (B-10): sc-166373. Western blot analysis of Cdk4 expression in MDA-MB-231 (A), Hs68 (B), ZR-75-1 (C) and Raji (D) whole cell lysates and NIH/3T3 nuclear extract (E).



Cdk4 (B-10): sc-166373. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic and nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells and interstitial cells (B).

SELECT PRODUCT CITATIONS

- Machado-Neto, J.A., et al. 2014. ANKHD1, a novel component of the Hippo signaling pathway, promotes YAP1 activation and cell cycle progression in prostate cancer cells. *Exp. Cell Res.* 324: 137-145.
- David, D., et al. 2014. Smurf2 E3 ubiquitin ligase modulates proliferation and invasiveness of breast cancer cells in a CNKSR2 dependent manner. *Cell Div.* 9: 2.
- Elliott, B., et al. 2019. Essential role of JunD in cell proliferation is mediated via Myc signaling in prostate cancer cells. *Cancer Lett.* 448: 155-167.
- Jeong, S.J., et al. 2019. Spirulina crude protein promotes the migration and proliferation in IEC-6 cells by activating EGFR/MAPK signaling pathway. *Mar. Drugs* 17: 205.
- Kim, K.M., et al. 2019. Orai1 inhibitor STIM2β regulates myogenesis by controlling SOCE dependent transcriptional factors. *Sci. Rep.* 9: 10794.
- Chen, Z., et al. 2021. The CRTC1-MAML2 fusion is the major oncogenic driver in mucoepidermoid carcinoma. *JCI Insight* 6: 139497.
- Murphy, J.M., et al. 2022. Nuclear focal adhesion kinase induces APC/C activator protein CDH1-mediated cyclin-dependent kinase4/6 degradation and inhibits melanoma proliferation. *J. Biol. Chem.* 298: 102013.
- Zhou, Y., et al. 2023. Lycopene suppresses gastric cancer cell growth without affecting normal gastric epithelial cells. *J. Nutr. Biochem.* 116: 109313.

RESEARCH USE

For research use only, not for use in diagnostic procedure.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.