

Cdk4 (3F121): sc-70831

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 (3F121) is a mouse monoclonal antibody raised against full length recombinant human Cdk4, with epitope mapping to amino acids 1-20.

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.

APPLICATIONS

Cdk4 (3F121) is recommended for detection of Cdk4 of mouse, rat and human origin by Western Blotting (starting dilution 1:1,000, dilution range 1:1,000-1:2,000), 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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: HeLa whole cell lysate: sc-2200, ZR-75-1 cell lysate: sc-2241 or MCF7 whole cell lysate: sc-2206.

STORAGE

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

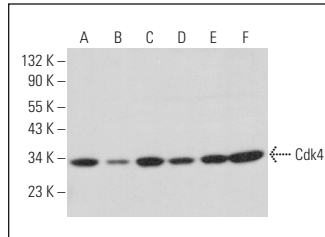
PROTOCOLS

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

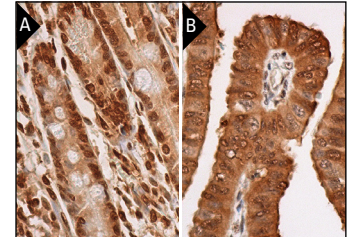
RESEARCH USE

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

DATA



Cdk4 (3F121): sc-70831. Western blot analysis of Cdk4 expression in HeLa (A), ZR-75-1 (B), MCF7 (C), K-562 (D), IMR-32 (E) and BT-20 (F) whole cell lysates.



Cdk4 (3F121): sc-70831. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum (A) and human fallopian (B) tissue showing cytoplasmic and nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

- Baranwal, S., et al. 2011. Molecular characterization of the tumor-suppressive function of nischarin in breast cancer. *J. Natl. Cancer Inst.* 103: 1513-1528.
- Kovatcheva, M., et al. 2015. MDM2 turnover and expression of ATRX determine the choice between quiescence and senescence in response to Cdk4 inhibition. *Oncotarget* 6: 8226-8243.
- Hrgovic, I., et al. 2016. The histone deacetylase inhibitor trichostatin a decreases lymphangiogenesis by inducing apoptosis and cell cycle arrest via p21-dependent pathways. *BMC Cancer* 16: 763.
- Li, Z., et al. 2017. The OncoPPi network of cancer-focused protein-protein interactions to inform biological insights and therapeutic strategies. *Nat. Commun.* 8: 14356.
- Que, W., et al. 2018. Antiproliferation activities of NK4 on multiple myeloma. *Exp. Ther. Med.* 16: 3668-3673.
- Pei, Y., et al. 2019. Ursolic acid suppresses the biological function of osteosarcoma cells. *Oncol. Lett.* 18: 2628-2638.
- Wang, H., et al. 2019. High expression of the transcriptional coactivator TAZ is associated with a worse prognosis and affects cell proliferation in patients with medulloblastoma. *Oncol. Lett.* 18: 5591-5599.
- Zhou, M., et al. 2020. Arctiin attenuates high glucose-induced human retinal capillary endothelial cell proliferation by regulating ROCK1/PTEN/PI3K/Akt/VEGF pathway *in vitro*. *J. Cell. Mol. Med.* 24: 5695-5706.
- Penta, D., et al. 2021. Dietary bioactive diindolylmethane enhances the therapeutic efficacy of centchroman in breast cancer cells by regulating ABCB1/P-gp efflux transporter. *J. Nutr. Biochem.* 94: 108749.



See **Cdk4 (DCS-35): sc-23896** for Cdk4 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.