SANTA CRUZ BIOTECHNOLOGY, INC.

Cdk4 (0.N.199): sc-70832

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 G_1 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).

REFERENCES

1. Okuda, T., et al. 1992. PCTAIRE-1 and PCTAIRE-2: two members of a novel Cdc2/Cdc28-related protein kinase gene family. Oncogene 7: 2249-2258.
2. Serrano, M., et al. 1993. A new regulatory motif in cell-cycle control causing specific inhibition of cyclin D/Cdk4. Nature 366: 704-707.

CHROMOSOMAL LOCATION

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

SOURCE

Cdk4 (0.N.199) 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 IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Cdk4 (0.N.199) is recommended for detection of Cdk4 of mouse, rat and human origin by Western Blotting (starting dilution 1:1,000, dilution range 1:1,00-1:2,000), 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: NIH/3T3 nuclear extract: sc-2138, MCF7 whole cell lysate: sc-2206 or Hep G2 cell lysate: sc-2227.

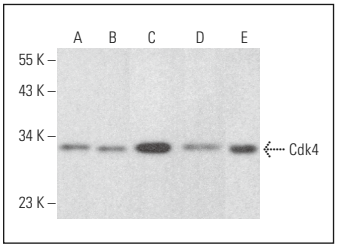
RESEARCH USE

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

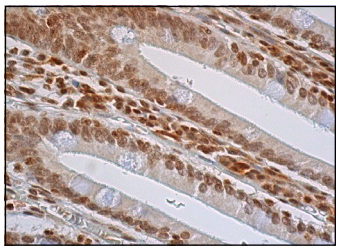
STORAGE

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

DATA



Cdk4 (0.N.199): sc-70832. Western blot analysis of Cdk4 expression in MCF7 (**A**), K-562 (**B**), OVCAR-3 (**C**) and Hep G2 (**D**) whole cell lysates and NIH/3T3 nuclear extract (**E**).



Cdk4 (0.N.199): sc-70832. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic and nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Fan, R., et al. 2010. Adenoviral-mediated RNA interference targeting URG11 inhibits growth of human hepatocellular carcinoma. Int. J. Cancer 128: 2980-2993.
2. He, M., et al. 2017. MiR-486 suppresses the development of osteosarcoma by regulating PKC-δ pathway. Int. J. Oncol. 50: 1590-1600.
3. Zhu, D., et al. 2018. MicroRNA-1180 is associated with growth and apoptosis in prostate cancer via TNF receptor associated factor 1 expression regulation and nuclear factor-κB signaling pathway activation. Oncol. Lett. 15: 4775-4780.
4. Liang, H., et al. 2019. Inhibition of cyclin E1 overcomes temozolomide resistance in glioblastoma by Mcl-1 degradation. Mol. Carcinog. 58: 1502-1511.
5. Azizi, R., et al. 2019. Inhibition of didscoidin domain receptor 1 reduces epithelial-mesenchymal transition and induce cell-cycle arrest and apoptosis in prostate cancer cell lines. J. Cell. Physiol. 234: 19539-19552.
6. Wang, Y., et al. 2019. Knockdown of REG Iα enhances the sensitivity to 5-fluorouracil of colorectal cancer cells via cyclin D1/Cdk4 pathway and BAX/Bcl-2 pathways. Cancer Biother. Radiopharm. 34: 362-370.
7. Zhao, G., et al. 2019. miR-495-3p inhibits the cell proliferation, invasion and migration of osteosarcoma by targeting C1q/TNF-related protein 3. Onco Targets Ther. 12: 6133-6143.
8. Tao, X.C., et al. 2019. miR-92a contributes to cell proliferation, apoptosis and doxorubicin chemosensitivity in gastric carcinoma cells. Oncol. Rep. 42: 313-320.

CONJUGATES

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.