

Cdk4 (DCS-35): sc-23896

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 (DCS-35) 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.

Cdk4 (DCS-35) is available conjugated to agarose (sc-23896 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-23896 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-23896 PE), fluorescein (sc-23896 FITC), Alexa Fluor[®] 488 (sc-23896 AF488), Alexa Fluor[®] 546 (sc-23896 AF546), Alexa Fluor[®] 594 (sc-23896 AF594) or Alexa Fluor[®] 647 (sc-23896 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-23896 AF680) or Alexa Fluor[®] 790 (sc-23896 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Cdk4 (DCS-35) 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), 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.

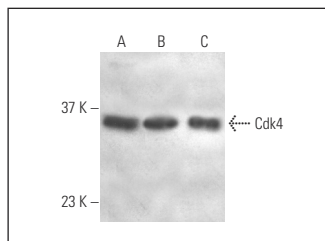
Molecular Weight of Cdk4: 34 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, F9 cell lysate: sc-2245 or HeLa whole cell lysate: sc-2200.

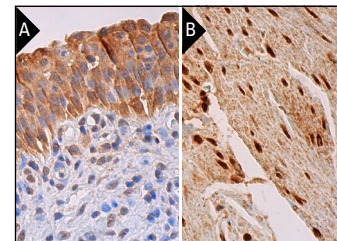
STORAGE

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

DATA



Cdk4 (DCS-35) HRP: sc-23896 HRP. Direct western blot analysis of Cdk4 expression in MCF7 (A), HeLa (B) and F9 (C) whole cell lysates.



Cdk4 (DCS-35): sc-23896. Immunoperoxidase detection of Cdk4 protein in formalin fixed, paraffin-embedded human urinary bladder tissue, showing cytoplasmic and nuclear staining of urothelial cells. Detection reagent used: m-IgGκ BP-HRP: sc-516102 (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing cytoplasmic and nuclear staining of smooth muscle cells (B).

SELECT PRODUCT CITATIONS

- Depoortere, F., et al. 2000. Transforming growth factor β selectively inhibits the cyclic AMP-dependent proliferation of primary thyroid epithelial cells by preventing the association of cyclin D3-Cdk4 with nuclear p27^{kip1}. *Mol. Biol. Cell* 11: 1061-1076.
- Kumar, V., et al. 2017. Role of A-kinase anchor protein (AKAP4) in growth and survival of ovarian cancer cells. *Oncotarget* 8: 53124-53136.
- Hsu, C.L., et al. 2018. Integrated genomic analyses in PDX model reveal a cyclin-dependent kinase inhibitor Palbociclib as a novel candidate drug for nasopharyngeal carcinoma. *J. Exp. Clin. Cancer Res.* 37: 233.
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- Yin, Y., et al. 2021. Bmi1 regulate tooth and mandible development by inhibiting p16 signal pathway. *J. Cell. Mol. Med.* 25: 4195-4203.
- Chen, C.P., et al. 2022. Mulberry polyphenol extracts attenuated senescence through inhibition of Ras/ERK via promoting Ras degradation in VSMC. *Int. J. Med. Sci.* 19: 89-97.
- Müller, L., et al. 2023. Plakophilin 3 facilitates G₁/S phase transition and enhances proliferation by capturing RB protein in the cytoplasm and promoting EGFR signaling. *Cell Rep.* 42: 112031.

RESEARCH USE

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

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