

Cdk2 (55): sc-136191

BACKGROUND

In vertebrates, as in yeast, multiple cyclins have been identified, including a total of eight such regulatory proteins in mammals. In contrast to the situation in yeast, the Cdc2 p34 kinase is not the only catalytic subunit identified in vertebrates that can interact with cyclins. While Cdc2 p34 is essential for the G₂ to M transition in vertebrate cells, a second Cdc2-related kinase has also been implicated in cell cycle control. This protein, designated cyclin dependent kinase 2 (Cdk2) p33, also binds to cyclins and its kinase activity is temporally regulated during the cell cycle. Several additional Cdc2 p34-related cyclin dependent kinases have been identified. These include Cdk3-Cdk8, PCTAIRE-1-3 and KKIALLRE.

REFERENCES

1. Riabowol, K., et al. 1989. The Cdc2 kinase is a nuclear protein that is essential for mitosis in mammalian cells. *Cell* 57: 393-401.
2. Morla, A.O., et al. 1989. Reversible tyrosine phosphorylation of Cdc2: dephosphorylation accompanies activation during entry into mitosis. *Cell* 58: 193-203.
3. Pines, J. and Hunter, T. 1989. Isolation of a human cyclin cDNA: evidence for cyclin mRNA and protein regulation in the cell cycle and for interaction with p34^{Cdc2}. *Cell* 58: 833-846.
4. Xiong, Y., et al. 1991. Human D-type cyclin. *Cell* 65: 691-699.

CHROMOSOMAL LOCATION

Genetic locus: CDK2 (human) mapping to 12q13.2; Cdk2 (mouse) mapping to 10 D3.

SOURCE

Cdk2 (55) is a mouse monoclonal antibody raised against amino acids 109-298 of Cdk2 of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2a} in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Cdk2 (55) is recommended for detection of Cdk2 of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Cdk2 siRNA (h): sc-29259, Cdk2 siRNA (m): sc-29260, Cdk2 shRNA Plasmid (h): sc-29259-SH, Cdk2 shRNA Plasmid (m): sc-29260-SH, Cdk2 shRNA (h) Lentiviral Particles: sc-29259-V and Cdk2 shRNA (m) Lentiviral Particles: sc-29260-V.

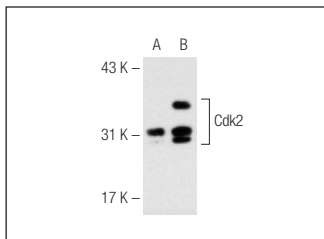
Molecular Weight of Cdk2: 34 kDa.

Positive Controls: Cdk2 (h): 293T Lysate: sc-128295, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

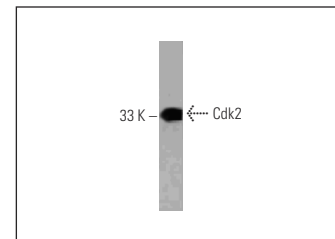
STORAGE

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

DATA



Cdk2 (55): sc-136191. Western blot analysis of Cdk2 expression in non-transfected: sc-117752 (A) and human Cdk2 transfected: sc-128295 (B) 293T whole cell lysates.



Cdk2 (55): sc-136191. Western blot analysis of Cdk2 expression in Jurkat whole cell lysate.

SELECT PRODUCT CITATIONS

1. Guo, H., et al. 2011. Downregulation of p57 accelerates the growth and invasion of hepatocellular carcinoma. *Carcinogenesis* 32: 1897-1904.
2. Xiao, C., et al. 2019. SPAG9 promotes prostate cancer proliferation and metastasis via MAPK signaling pathway. *Am. J. Transl. Res.* 11: 5249-5260.
3. Wang, X., et al. 2019. Mitofusin2 regulates the proliferation and function of fibroblasts: the possible mechanisms underlying pelvic organ prolapse development. *Mol. Med. Rep.* 20: 2859-2866.
4. Henri, P., et al. 2019. Psoriatic epidermis is associated with upregulation of Cdk2 and inhibition of Cdk4 activity. *Br. J. Dermatol.* 182: 678-689.
5. 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.
6. Hsu, C.H., et al. 2023. Therapeutic targeting of hepatocellular carcinoma cells with antrocinol, a novel, dual-specificity, small-molecule inhibitor of the KRAS and ERK oncogenic signaling pathways. *Chem. Biol. Interact.* 370: 110329.

RESEARCH USE

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

PROTOCOLS

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



See **Cdk2 (D-12): sc-6248** for Cdk2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.