

Cdk2 (h2): 293T Lysate: sc-172351

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, Cdk4, Cdk5, PCTAIRE-1, PCTAIRE-2, PCTAIRE-3, Cdk6, Cdk7 and Cdk8.

REFERENCES

1. Riabowol, K., Draetta, G., Brizuela, L., Vandre, D. and Beach, D. 1989. The Cdc2 kinase is a nuclear protein that is essential for mitosis in mammalian cells. *Cell* 57: 393-401.
2. Morla, A.O., Draetta, G., Beach, D. and Wang, J.Y. 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 p34cdc2. *Cell* 58: 833-846.
4. Xiong, Y., Connolly, T., Futcher, B. and Beach, D. 1991. Human D-type cyclin. *Cell* 65: 691-699.
5. Kobayashi, H., Golsteyn, R., Poon, R., Stewart, E., Gannon, J., Minshull, J., Smith, R. and Hunt, T. 1991. Cyclins and their partners during *Xenopus* oocyte maturation. *Cold Spring Harb. Symp. Quant. Biol.* 56:437-56447.
6. Pagano, M., Pepperkok, R., Verde, F., Ansorge, W. and Draetta, G. 1992. Cyclin A is required at two points in the human cell cycle. *EMBO J.* 11: 961-971.
7. Elledge, S.J., Richman, R., Hall, F.L., Williams, R.T., Lodgson, N. and Harper, J.W. 1992. Cdk2 encodes a 33 kDa cyclin A-associated protein kinase and is expressed before Cdc2 in the cell cycle. *Proc. Natl. Acad. Sci. USA* 89: 2907-2911.
8. Lukas, J., Draetta, G. and Bartek, J. 1992. Distinct forms of human Cdc2 identified by novel monoclonal antibodies. *Eur. J. Biochem.* 207: 169-176.
9. Strausfeld, U.P., Howell, M., Rempel, R., Maller, J.L., Hunt, T. and Blow, J.J. 1994. Cip1 blocks the initiation of DNA replication in *Xenopus* extracts by inhibition of cyclin-dependent kinases. *Curr. Biol.* 4: 876-883.

CHROMOSOMAL LOCATION

Genetic locus: CDK2 (human) mapping to 12q13.2.

PRODUCT

Cdk2 (h2): 293T Lysate represents a lysate of human Cdk2 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Cdk2 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive Cdk2 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

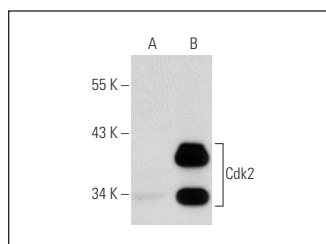
Cdk2 (O.N.198): sc-70829 is recommended as a positive control antibody for Western Blot analysis of enhanced human Cdk2 expression in Cdk2 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

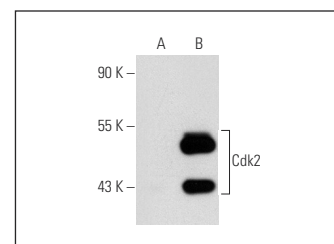
To ensure optimal results, the following support reagents are recommended:

1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



Cdk2 (O.N.198): sc-70829. Western blot analysis of Cdk2 expression in non-transfected: sc-117752 (A) and human Cdk2 transfected: sc-172351 (B) 293T whole cell lysates.



Cdk2 (AN4.3): sc-53220. Western blot analysis of Cdk2 expression in non-transfected: sc-117752 (A) and human Cdk2 transfected: sc-172351 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

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