

# Cdc2 p34 (B322): sc-56261

## 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 G<sub>2</sub> 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, Cdk8 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., et al. 1989. Isolation of a human cyclin cDNA: evidence for cyclin mRNA and protein regulation in the cell cycle and for interaction with p34<sup>Cdc2</sup>. *Cell* 58: 833-846.
4. Kobayashi, H., et al. 1991. Cyclins and their partners during *Xenopus* oocyte maturation. *Cold Spring Harb. Symp. Quant. Biol.* 56: 437-447.
5. Xiong, Y., et al. 1991. Human D-type cyclin. *Cell* 65: 691-699.
6. Pagano, M., et al. 1992. Cyclin A is required at two points in the human cell cycle. *EMBO J.* 11: 961-971.
7. Lukas, J., et al. 1992. Distinct forms of human Cdc2 identified by novel monoclonal antibodies. *Eur. J. Biochem.* 207: 169-176.
8. Elledge, S.J., et al. 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.

## CHROMOSOMAL LOCATION

Genetic locus: CDK1 (human) mapping to 10q21.2; Cdk1 (mouse) mapping to 10 B5.3.

## SOURCE

Cdc2 p34 (B322) is a mouse monoclonal antibody raised against a synthetic peptide of human Cdc2 p34.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

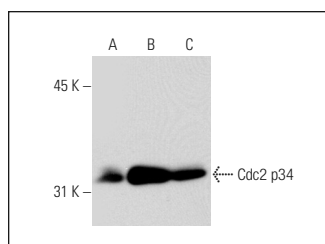
Cdc2 p34 (B322) is recommended for detection of Cdc2 p34 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with other related cyclin dependent kinases.

Suitable for use as control antibody for Cdc2 p34 siRNA (h): sc-29252, Cdc2 p34 siRNA (m): sc-29253, Cdc2 p34 shRNA Plasmid (h): sc-29252-SH, Cdc2 p34 shRNA Plasmid (m): sc-29253-SH, Cdc2 p34 shRNA (h) Lentiviral Particles: sc-29252-V and Cdc2 p34 shRNA (m) Lentiviral Particles: sc-29253-V.

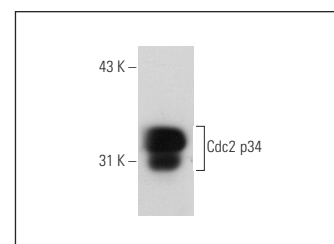
Molecular Weight of Cdc2 p34: 34 kDa.

Positive Controls: Cdc2 p34 (m): 293T Lysate: sc-119124, K-562 whole cell lysate: sc-2203 or HeLa whole cell lysate: sc-2200.

## DATA



Cdc2 p34 (B322): sc-56261. Western blot analysis of Cdc2 p34 expression in non-transfected 293T: sc-117752 (A), mouse Cdc2 p34 transfected 293T: sc-119124 (B) and K-562 (C) whole cell lysates.



Cdc2 p34 (B322): sc-56261. Western blot analysis of Cdc2 p34 expression in HeLa whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Hage-Sleiman, R., et al. 2011. Silencing of tubulin binding cofactor C modifies microtubule dynamics and cell cycle distribution and enhances sensitivity to gemcitabine in breast cancer cells. *Mol. Cancer Ther.* 10: 303-312.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.



See **Cdc2 p34 (17): sc-54** for Cdc2 p34 antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647.