

# Cdc2 p34 (B-5): sc-137035

## 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-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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Cdc2 p34 (B-5) is a mouse monoclonal antibody raised against amino acids 1-297 representing full length Cdc2 p34 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Cdc2 p34 (B-5) is recommended for detection of Cdc2 p34 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), 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 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: K-562 whole cell lysate: sc-2203, MCF7 whole cell lysate: sc-2206 or BJAB whole cell lysate: sc-2207.

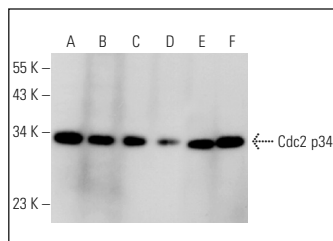
## RESEARCH USE

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

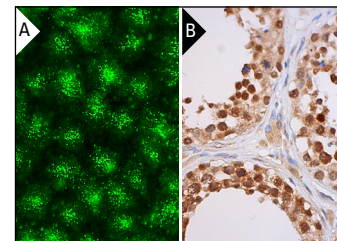
## STORAGE

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

## DATA



Cdc2 p34 (B-5): sc-137035. Western blot analysis of Cdc2 p34 expression in PC-3 (A), MCF7 (B), BJAB (C), K-562 (D), HL-60 (E) and Ramos (F) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



Cdc2 p34 (B-5): sc-137035. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear and cytoplasmic staining of cells in seminiferous ducts and cytoplasmic staining of Leydig cells (B).

## SELECT PRODUCT CITATIONS

1. Valle-Argos, B., et al. 2011. Neurostatin blocks glioma cell cycle progression by inhibiting EGFR activation. *Mol. Cell. Neurosci.* 46: 89-100.
2. Sun, K.K., et al. 2013. Enhanced radiosensitivity of NSCLC cells by transducer of erbB2.1 (TOB1) through modulation of the MAPK/ERK pathway. *Oncol. Rep.* 29: 2385-2391.
3. Liu, R., et al. 2015. CDK1-mediated SIRT3 activation enhances mitochondrial function and tumor radioresistance. *Mol. Cancer Ther.* 14: 2090-2102.
4. Peng, Y.T., et al. 2016. Particularly interesting Cys-His-rich protein is highly expressed in human intracranial aneurysms and resists aneurysmal rupture. *Exp. Ther. Med.* 12: 3905-3912.
5. Xu, X., et al. 2017. A signature motif in LIM proteins mediates binding to checkpoint proteins and increases tumour radioresistance. *Nat. Commun.* 8: 14059.
6. Gurrapu, S., et al. 2018. Sema4C/PlexinB2 signaling controls breast cancer cell growth, hormonal dependence and tumorigenic potential. *Cell Death Differ.* 25: 1259-1275.
7. Kuang, Y., et al. 2019. Iron-dependent CDK1 activity promotes lung carcinogenesis via activation of the GP130/Stat3 signaling pathway. *Cell Death Dis.* 10: 297.
8. Cao, Y., et al. 2021. Elevated TAB182 enhances the radioresistance of esophageal squamous cell carcinoma through G<sub>2</sub>-M checkpoint modulation. *Cancer Med.* 10: 3101-3112.

## CONJUGATES

See **Cdc2 p34 (17): sc-54** for Cdc2 p34 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor<sup>®</sup> 488, 546, 594, 647, 680 and 790.