

Cdc2 p34 (17): sc-54

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.

CHROMOSOMAL LOCATION

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

SOURCE

Cdc2 p34 (17) is a mouse monoclonal antibody raised against amino acids 224-230 mapping within a central region of Cdc2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cdc2 p34 (17) is available conjugated to agarose (sc-54 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-54 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-54 PE), fluorescein (sc-54 FITC), Alexa Fluor[®] 488 (sc-54 AF488), Alexa Fluor[®] 546 (sc-54 AF546), Alexa Fluor[®] 594 (sc-54 AF594) or Alexa Fluor[®] 647 (sc-54 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-54 AF680) or Alexa Fluor[®] 790 (sc-54 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, Cdc2 p34 (17) is available conjugated to TRITC (sc-54 TRITC, 200 µg/ml), for IF, IHC(P) and FCM.

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APPLICATIONS

Cdc2 p34 (17) is recommended for detection of Cdc2 p34 of mouse, rat, human and *Xenopus laevis* 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).

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.

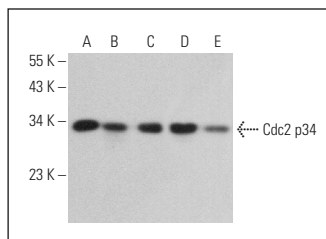
Molecular Weight of Cdc2 p34: 34 kDa.

Positive Controls: ZR-75-1 cell lysate: sc-2241, MM-142 cell lysate: sc-2246 or HeLa whole cell lysate: sc-2200.

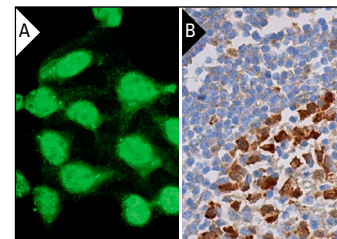
STORAGE

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

DATA



Cdc2 p34 (17): sc-54. Western blot analysis of Cdc2 p34 expression in HeLa (A), ZR-75-1 (B), Neuro-2A (C) and MM-142 (D) whole cell lysates and rat testis tissue extract (E).



Cdc2 p34 (17): sc-54. Immunofluorescence staining of methanol-fixed HeLa cells showing specific staining of nuclei and centrosomes (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear and cytoplasmic staining of cells in germinal center (B).

SELECT PRODUCT CITATIONS

1. Soonpaa, M.H., et al. 1997. Cyclin D1 overexpression promotes cardiomyocyte DNA synthesis and multinucleation in transgenic mice. *J. Clin. Invest.* 99: 2644-2654.
2. Zhao, L., et al. 2016. LW-213 induces G₂/M cell cycle arrest through AKT/GSK3β/β-catenin signaling pathway in human breast cancer cells. *Mol. Carcinog.* 55: 778-792
3. Nguyen, T.M., et al. 2016. Loss of ITM2A, a novel tumor suppressor of ovarian cancer through G₂/M cell cycle arrest, is a poor prognostic factor of epithelial ovarian cancer. *Gynecol. Oncol.* 140: 545-553.
4. Shi, W., et al. 2016. Molecular mechanisms underlying mangiferin-induced apoptosis and cell cycle arrest in A549 human lung carcinoma cells. *Mol. Med. Rep.* 13: 3423-3432.
5. VanOudenhove, J.J., et al. 2016. Lineage-specific early differentiation of human embryonic stem cells requires a G₂ cell cycle pause. *Stem Cells* 34: 1765-1775.
6. Shin, S.S., et al. 2017. HSPA6 augments garlic extract-induced inhibition of proliferation, migration, and invasion of bladder cancer EJ cells; Implication for cell cycle dysregulation, signaling pathway alteration, and transcription factor-associated MMP-9 regulation. *PLoS ONE* 12: e0171860.
7. Xia, D., et al. 2017. Knockout of MARCH2 inhibits the growth of HCT116 colon cancer cells by inducing endoplasmic reticulum stress. *Cell Death Dis.* 8: e2957.
8. Qiu, C., et al. 2017. Licochalcone A inhibits the proliferation of human lung cancer cell lines A549 and H460 by inducing G₂/M cell cycle arrest and ER stress. *Int. J. Mol. Sci.* 18 pii: E1761.

RESEARCH USE

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