SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc2 p34 (17): sc-54

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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_2 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 KKIALRE.

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.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

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.

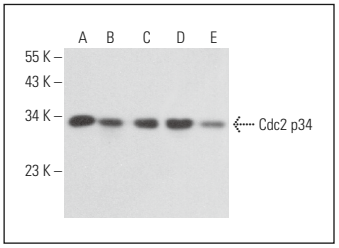
Molecular Weight of Cdc2 p34: 34 kDa.

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

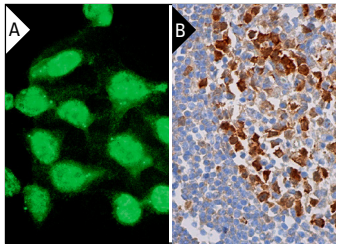
STORAGE

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. Weinstein, J., et al. 1994. A novel mammalian protein, p55CDC, present in dividing cells is associated with protein kinase activity and has homology to the *Saccharomyces cerevisiae* cell division cycle proteins Cdc20 and Cdc4. Mol. Cell. Biol. 14: 3350-3363.
2. 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.
3. Zhuge, W., et al. 2018. Costunolide specifically binds and inhibits thioredoxin reductase 1 to induce apoptosis in colon cancer. Cancer Lett. 412: 46-58.
4. Gómez-H, L., et al. 2019. The PSMA8 subunit of the spermatoproteasome is essential for proper meiotic exit and mouse fertility. PLoS Genet. 15: e1008316.
5. Bai, C., et al. 2020. Hog1-induced transcription of RTC3 and HSP12 is robust and occurs in cells lacking Msn2, Msn4, Hot1 and Sko1. PLoS ONE 15: e0237540.
6. Voce, D.J., et al. 2021. CDK1 is up-regulated by temozolomide in an NFκB dependent manner in glioblastoma. Sci. Rep. 11: 5665.
7. Knudsen, E.S., et al. 2022. CDK/cyclin dependencies define extreme cancer cell-cycle heterogeneity and collateral vulnerabilities. Cell Rep. 38: 110448.
8. Katabami, M., et al. 2023. Crystalline silica-exposed human lung epithelial cells presented enhanced anchorage-independent growth with upregulated expression of BRD4 and EZH2 in autocrine and paracrine manners. PLoS ONE 18: e0285354.

RESEARCH USE

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