SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc2 p34 (17): sc-54

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cyclins are regulatory subunits which associate with kinases to form complexes that control many of the important steps in cell cycle progression. The best characterized of the cyclin-containing complexes is the association of cyclin B with p34Cdc2 kinase. The human Cdc2 protein kinase, p34Cdc2, represents the homolog of the Cdc2+/CDC28 yeast protein kinase. This 34 kDa polypeptide exhibits protein kinase activity *in vitro* and exists in a complex with both cyclin B and a 13 kDa protein that is homologous to p13Suc 1. Cdc2 kinase is the active subunit of the M phase promoting factor (MPF) and the M phase-specific Histone H1 kinase. The p34Cdc2/cyclin B complex is required for the G_2 to M transition, but the physiologic role of other cyclins is yet to be resolved.

REFERENCES

1. Draetta, G., et al. 1987. Identification of p34 and p13, human homologs of the cell cycle regulators of fission yeast encoded by Cdc2+ and Suc 1+. Cell 50: 319-325.
2. Brizuela, L., et al. 1987. p13Suc 1 acts in the fission yeast cell division cycle as a component of the p34Cdc2 protein kinase. EMBO J. 6: 3507-3514.
3. Arion, D., et al. 1988. Cdc2 is a component of the M phase-specific Histone H1 kinase: evidence for identity with MPF. Cell 55: 371-378.
4. Dunphy, W.G., et al. 1988. The *Xenopus* Cdc2 protein is a component of MPF, a cytoplasmic regulator of mitosis. Cell 54: 423-431.

CHROMOSOMAL LOCATION

Genetic locus: CDC2 (human) mapping to 10q21.1; Cdc2 (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} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as agarose conjugate for immunoprecipitation, sc-54 AC, 500 µg/ 0.25 ml agarose in 1 ml.

Available as HRP conjugate for Western blotting, sc-54 HRP, 200 µg/ml.

Available as fluorescein (sc-54 FITC) or rhodamine (sc-54 TRITC) conjugates for use in immunofluorescence, 200 µg/ml.

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.

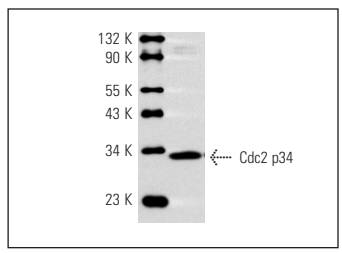
APPLICATIONS

Cdc2 p34 (17) 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, immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and kinase assay.

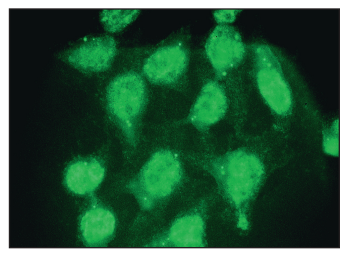
Suitable for use as control antibody for Cdc2 p34 siRNA (h): sc-29252 and Cdc2 p34 siRNA (m): sc-29253.

Positive Controls: A-431 nuclear extract: sc-2122, human colon carcinoma tissue or HeLa nuclear extract: sc-2120.

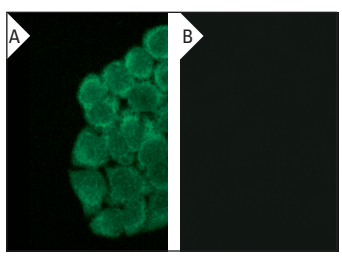
DATA



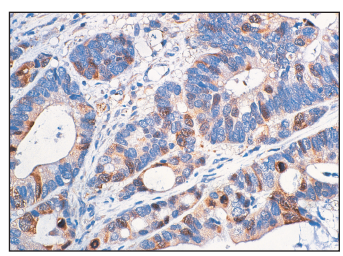
Cdc2 p34 (17): sc-54. Western blot analysis of Cdc2 p34 expression in A-431 nuclear extract.



Cdc2 p34 (17): sc-54. Immunofluorescence staining of methanol-fixed HeLa cells showing specific staining of nuclei and centrosomes.



Cdc2 p34 siRNA (h): sc-29252. Immunofluorescence staining of methanol-fixed, control HeLa (**A**) and Cdc2 p34 siRNA silenced HeLa (**B**) cells showing diminished nuclear staining in the siRNA silenced cells. Cells probed with Cdc2 p34 (17): sc-54.



Cdc2 p34 (17): sc-54. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon carcinoma tissue showing nuclear staining of selected cells.

SELECT PRODUCT CITATIONS

1. Burns, T.F., et al. 2003. Silencing of the novel p53 target gene Snk/Plk2 leads to mitotic catastrophe in paclitaxel (taxol)-exposed cells. Mol. Cell. Biol. 23: 5556-5571.
2. Shah, OJ, et al. 2003. Mitotic regulation of ribosomal S6 kinase 1 involves Ser/Thr, Pro phosphorylation of consensus and non-consensus sites by Cdc2.. Am. J. Hum. Gen. 278: 16433-16442.
3. Jin, Z.H., et al. 2005. Hematopoietic cytokines enhance Chk1-dependent G_2/M checkpoint activation by etoposide through the Akt/GSK3 pathway to inhibit apoptosis. Oncogene 24: 1973-1981.
4. Wei, Jen-Hsuan, et al. 2005. TTK/hMps1 participates in the regulation of DNA damage checkpoint response by phosphorylating CHK2 on Threonine 68. J. Biol. Chem. 280: 7748-7757.