SANTA CRUZ BIOTECHNOLOGY, INC.

p-cyclin B1 (Ser 128): sc-130591

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The Power to Question

BACKGROUND

In eukaryotic cells, mitosis is initiated following the activation of a protein kinase known variously as maturation-promoting factor, M-phase specific histone kinase or M-phase kinase. This protein kinase is composed of a catalytic subunit (Cdc2), a regulatory subunit (cyclin B) and a low molecular weight subunit (p13 SUC1). The Cdc/cyclin enzyme is subject to multiple levels of control, of which the regulation of the catalytic subunit by tyrosine phosphorylation is the best understood. Tyrosine phosphorylation inhibits the Cdc2/cyclin B enzyme; tyrosine dephosphorylation, occurring at the onset of mitosis, directly activates the pre-MPF complex. Evidence has established that B type cyclins not only act on M-phase regulatory subunits of the Cdc2 protein kinase, but also activate the Cdc25A and Cdc25B endogenous tyrosine phosphatase, of which Cdc2 is the physiological substrate. The specificity of this effect is shown by the inability of either cyclin A or cyclin D1 to display any such stimulation of Cdc25A or Cdc25B.

REFERENCES

1. Murray, A.W., et al. 1989. Dominoes and clocks: the union of two views of the cell cycle. Science 246: 614-621.
2. Morla, A.O., et al. 1989. Reversible tyrosine phosphorylation of Cdc2: dephosphorylation accompanies activation during entry into mitosis. Cell 58: 193-203.
3. Doree, M. 1990. Control of M-phase by maturation promoting factor. Curr. Opin. Cell Biol. 2: 269-273.
4. Gautier, J., et al. 1990. Cyclin is a component of maturation-promoting factor from *Xenopus*. Cell 60: 487-494.
5. Jessus, C., et al. 1990. Direct activation of Cdc2 with phosphatase: identification of p13 SUC1 sensitive and insensitive steps. FEBS Letts. 266: 4-8.
6. Gautier, J., et al. 1991. Cyclin B in *Xenopus oocytes*: Implications for the mechanism of pre-MPF activation. EMBO J. 10: 177-182.
7. Galaktionov, K., et al. 1991. Specific activation of Cdc25 tyrosine phosphatases by B-type cyclins: Evidence for multiple roles of mitotic cyclins. Cell 67: 1181-1194.
8. Jessus, C., et al. 1992. Oscillation of MPF is accompanied by periodic association between Cdc25 and Cdc2-cyclin B. Cell 68: 323-332.
9. Li, JP. et al. 2007. Cyclin B1 proteolysis via p38 MAPK signaling participates in G_2 checkpoint elicited by arsenite. J. Cell. Physiol. 212: 481-488.

CHROMOSOMAL LOCATION

Genetic locus: CCNB1 (human) mapping to 5q13.2.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

SOURCE

p-cyclin B1 (Ser 128) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 128 of cyclin B1 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-cyclin B1 (Ser 128) is recommended for detection of Ser 128 phosphorylated cyclin B1 of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for cyclin B1 siRNA (h): sc-29284, cyclin B1 shRNA Plasmid (h): sc-29284-SH and cyclin B1 shRNA (h) Lentiviral Particles: sc-29284-V.

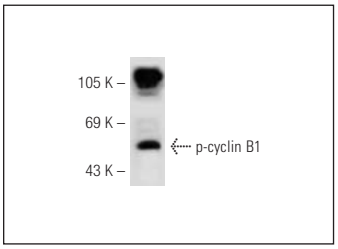
Molecular Weight of p-cyclin B1: 60 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



p-cyclin B1 (Ser 128): sc-130591. Western blot analysis of cyclin B1 phosphorylation in K-562 whole cell lysate.

RESEARCH USE

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