SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin B1 (H-20): sc-594

SANTA CRUZ BIOTECHNOLOGY

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 and tyrosine dephosphorylation, occurring at the onset of mitosis, directly activates the pre-MPF complex. Evidence has estalished 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.

CHROMOSOMAL LOCATION

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

SOURCE

cyclin B1 (H-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of cyclin B1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-594 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

cyclin B1 (H-20) is recommended for detection of 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

cyclin B1 (H-20) is also recommended for detection of cyclin B1 in additional species, including equine, canine, bovine and porcine.

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 cyclin B1: 60 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, K-562 + PMA nuclear extract: sc-2131 or Jurkat nuclear extract: sc-2132.

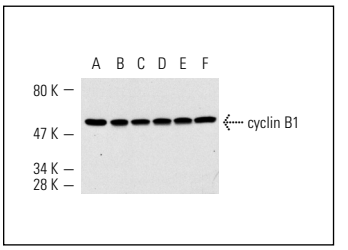
STORAGE

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

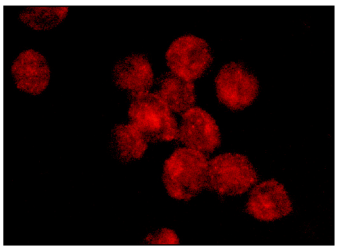
RESEARCH USE

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

DATA



cyclin B1 (H-20): sc-594. Western blot analysis of cyclin B1 expression in untreated (**A**,**C**,**E**) and phorbol ester-induced (**B**,**D**,**F**) K-562 (**A**,**B**), Jurkat (**C**,**D**) and HeLa (**E**,**F**) nuclear extracts.



cyclin B1 (H-20): sc-594. Immunofluorescence staining of methanol-fixed K-562 cells showing cytoplasmic and nuclear staining.

SELECT PRODUCT CITATIONS

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4. Schmetsdorf, S., et al. 2007. Constitutive expression of functionally active cyclin-dependent kinases and their binding partners suggests noncanonical functions of cell cycle regulators in differentiated neurons. Cereb. Cortex. 17: 1821-1829.
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11. Xie, P., et al. 2011. ATM-mediated NuSAP phosphorylation induces mitotic arrest. Biochem. Biophys. Res. Commun. 404: 413-418.