

cyclin B1 (H-433): sc-752

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-Suc 1). 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 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.

CHROMOSOMAL LOCATION

Genetic locus: CCNB1 (human) mapping to 5q13.2; Ccnb1 (mouse) mapping to 13 D1.

SOURCE

cyclin B1 (H-433) is a rabbit polyclonal antibody raised against amino acids 1-433 representing full length 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.

Available as agarose conjugate for immunoprecipitation, sc-752 AC, 500 µg/0.25 ml agarose in 1 ml; as HRP conjugate for Western blotting, sc-752 HRP, 200 µg/1 ml; as fluorescein conjugate for immunofluorescence, sc-752 FITC, 200 µg/1 ml; and as rhodamine conjugate for immunofluorescence, sc-752 TRITC, 200 µg/1 ml.

APPLICATIONS

cyclin B1 (H-433) is recommended for detection of cyclin B1 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 (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

cyclin B1 (H-433) is also recommended for detection of cyclin B1 in additional species, including equine, canine, bovine and porcine.

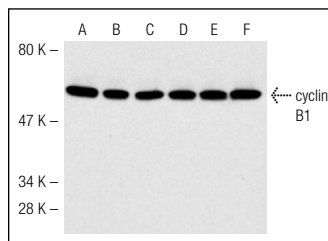
Suitable for use as control antibody for cyclin B1 siRNA (h): sc-29284, cyclin B1 siRNA (m): sc-29285, cyclin B1 shRNA Plasmid (h): sc-29284-SH, cyclin B1 shRNA Plasmid (m): sc-29285-SH, cyclin B1 shRNA (h) Lentiviral Particles: sc-29284-V and cyclin B1 shRNA (m) Lentiviral Particles: sc-29285-V.

Molecular Weight of cyclin B1: 60 kDa.

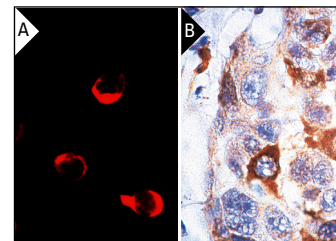
STORAGE

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

DATA



cyclin B1 (H-433): sc-752. 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-433): sc-752. Immunofluorescence staining of methanol-fixed K-562 cells showing cytoplasmic staining (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue at high magnification. Note staining of selected cells, showing cytoplasmic localization (B).

SELECT PRODUCT CITATIONS

- Gromoll, J., et al. 1997. Expression of mitotic cyclin B1 is not confined to proliferating cells in the rat testis. *Biol. Reprod.* 57: 1312-1319.
- Vázquez-Novelle, M.D., et al. 2010. Human Cdc14A phosphatase modulates the G₂/M transition through Cdc25A and Cdc25B. *J. Biol. Chem.* 285: 40544-40553.
- Kajitani, K., et al. 2010. Developmental expression of the cyclin D2 splice variant in postnatal Purkinje cells of the mouse cerebellum. *Neurosci. Lett.* 477: 100-104.
- Liu, W., et al. 2010. PHF8 mediates histone H4 lysine 20 demethylation events involved in cell cycle progression. *Nature* 466: 508-512.
- Hsu, C.C., et al. 2011. Identifying LRRC16B as an oncofetal gene with transforming enhancing capability using a combined bioinformatics and experimental approach. *Oncogene* 30: 654-667.
- Culver, C., et al. 2011. HIF-1α depletion results in SP1-mediated cell cycle disruption and alters the cellular response to chemotherapeutic drugs. *Cell Cycle* 10: 1249-1260.
- Echiburú-Chau, C., et al. 2011. Deleterious MnSOD signals lead to abnormal breast cell proliferation by radiation and estrogen exposure. *Int. J. Oncol.* 38: 1703-1711.
- Hsu, J.D., et al. 2011. Gallic acid induces G₂/M phase arrest of breast cancer cell MCF-7 through stabilization of p27^{Kip1} attributed to disruption of p27^{Kip1}/Skp2 complex. *J. Agric. Food Chem.* 59: 1996-2003.
- Ou, T.T., et al. 2011. *Paeonia lactiflora* Pall inhibits bladder cancer growth involving phosphorylation of Chk2 *in vitro* and *in vivo*. *J. Ethnopharmacol.* 135: 162-172.

RESEARCH USE

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