SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin B2 (X29.2): sc-53240

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 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 two B type cyclins, cyclin B1 and cyclin B2, have been shown to have distinct tissue distributions.

REFERENCES

1. Murray, A.W. and Kirschner, M.W. 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. Jessus, C., et alD. 1990. Direct activation of Cdc2 with phosphatase: identification of p13Suc1 sensitive and insensitive steps. FEBS Lett. 266: 4-8.
4. Doree, M. 1990. Control of M phase by maturation promoting factor. Curr. Opin. Cell Biol. 2: 269-273.
5. Gautier, J., et al. 1990. Cyclin is a component of maturation-promoting factor from *Xenopus*. Cell 60: 487-494.
6. Gautier, J. and Maller, J.L. 1991. Cyclin B in *Xenopus* oocytes: Implications for the mechanism of pre-MPF activation. EMBO J. 10: 177-182.
7. Galaktionov, K. and Beach, D. 1991. Specific activation of Cdc25 tyrosine phosphatases by B type cyclins: Evidence for multiple roles of mitotic cyclins. Cell 67: 1181-1194.

CHROMOSOMAL LOCATION

Genetic locus: CCNB2 (human) mapping to 15q22.2; Ccnb2 (mouse) mapping to 9 D.

SOURCE

cyclin B2 (X29.2) is a mouse monoclonal antibody raised against cyclin B2 of *Xenopus* origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

cyclin B2 (X29.2) is recommended for detection of cyclin B2 of mouse, rat, human and *Xenopus laevis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)]; may cross-react with cyclin B1 and other cyclin Bs.

Suitable for use as control antibody for cyclin B2 siRNA (h): sc-37074, cyclin B2 siRNA (m): sc-37075, cyclin B2 shRNA Plasmid (h): sc-37074-SH, cyclin B2 shRNA Plasmid (m): sc-37075-SH, cyclin B2 shRNA (h) Lentiviral Particles: sc-37074-V and cyclin B2 shRNA (m) Lentiviral Particles: sc-37075-V.

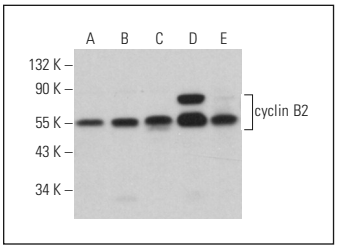
Molecular Weight of cyclin B2: 51 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, K-562 whole cell lysate: sc-2203 or HCT-116 whole cell lysate: sc-364175.

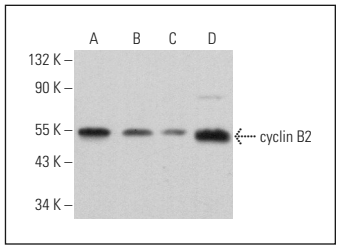
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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



cyclin B2 (X29.2): sc-53240. Western blot analysis of cyclin B2 expression in K-562 (**A**), Jurkat (**B**), HeLa (**C**), F9 (**D**) and c4 (**E**) whole cell lysates.



cyclin B2 (X29.2): sc-53240. Western blot analysis of cyclin B2 expression in A-431 (**A**), K-562 (**B**), CCRF-CEM (**C**) and HCT-116 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Kang, Q., et al. 2014. Evidence toward a dual phosphatase mechanism that restricts Aurora A (Thr-295) phosphorylation during the early embryonic cell cycle. J. Biol. Chem. 289: 17480-17496.

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 for detailed protocols and support products.