SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin B2 (K-16): sc-5238

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

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. Jessus, C., et al. 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. 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.
7. Gautier, J., et al. 1991. Cyclin B in *Xenopus* oocytes: Implications for the mechanism of pre-MPF activation. EMBO J. 10: 177-182.

CHROMOSOMAL LOCATION

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

SOURCE

cyclin B2 (K-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of cyclin B2 of mouse 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-5238 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

cyclin B2 (K-16) is recommended for detection of cyclin B2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 B2 (K-16) is also recommended for detection of cyclin B2 in additional species, including equine, bovine and porcine.

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: F9 cell lysate: sc-2245, A-431 whole cell lysate: sc-2201 or 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 donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Petermann, A.T., et al. 2003. Mitotic cell cycle proteins increase in podo-cytes despite lack of proliferation. Kidney Int. 63: 113-122.

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.

PROTOCOLS

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