SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin B2 (A-2): sc-28303

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-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.

CHROMOSOMAL LOCATION

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

SOURCE

cyclin B2 (A-2) is a mouse monoclonal antibody raised against amino acids 1-105 of cyclin B2 of human 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.

cyclin B2 (A-2) is available conjugated to agarose (sc-28303 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-28303 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28303 PE), fluorescein (sc-28303 FITC), Alexa Fluor® 488 (sc-28303 AF488), Alexa Fluor® 546 (sc-28303 AF546), Alexa Fluor® 594 (sc-28303 AF594) or Alexa Fluor® 647 (sc-28303 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-28303 AF680) or Alexa Fluor® 790 (sc-28303 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

cyclin B2 (A-2) is recommended for detection of cyclin B2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1,000), 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).

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.

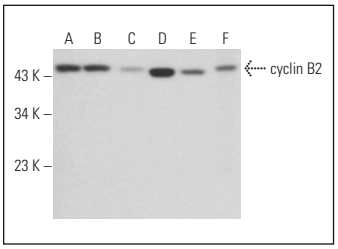
Molecular Weight of cyclin B2: 51 kDa.

Positive Controls: cyclin B2 (m): 293T Lysate: sc-119545, F9 cell lysate: sc-2245 or K-562 whole cell lysate: sc-2203.

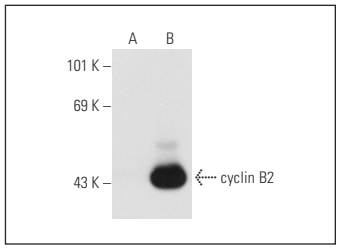
STORAGE

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

DATA



cyclin B2 (A-2): sc-28303. Western blot analysis of cyclin B2 expression in K-562 (**A**), HeLa (**B**), Jurkat (**C**), F9 (**D**) and c4 (**E**) whole cell lysates and rat testis tissue extract (**F**).



cyclin B2 (A-2): sc-28303. Western blot analysis of cyclin B2 expression in non-transfected: sc-117752 (**A**) and mouse cyclin B2 transfected: sc-119545 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

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2. Konduri, S.D., et al. 2009. Blockade of MGMT expression by O^6 benzyl guanine leads to inhibition of pancreatic cancer growth and induction of apoptosis. Clin. Cancer Res. 15: 6087-6095.
3. Cheng, I.K., et al. 2010. Reduced CRYL1 expression in hepatocellular carcinoma confers cell growth advantages and correlates with adverse patient prognosis. J. Pathol. 220: 348-360.
4. Toledano, Y., et al. 2012. Estradiol partially recapitulates murine pituitary cell cycle response to pregnancy. Endocrinology 153: 5011-5022.
5. Shi, Q., et al. 2016. ISL1, a novel regulator of CCNB1, CCNB2 and c-MYC genes, promotes gastric cancer cell proliferation and tumor growth. Oncotarget 7: 36489-36500.
6. Wu, T., et al. 2017. 17β-estradiol promotes islet cell proliferation in a partial pancreatectomy mouse model. J. Endocr. Soc. 1: 965-979.
7. Rata, S., et al. 2018. Two interlinked bistable switches govern mitotic control in mammalian cells. Curr. Biol. 28: 3824-3832.e6.
8. Jang, J., et al. 2019. Control over single-cell distribution of G_1 lengths by WNT governs pluripotency. PLoS Biol. 17: e3000453.
9. Hagey, D.W. et al. 2020. Cyclin-B1/2 and -D1 act in opposition to coordinate cortical progenitor self-renewal and lineage commitment. Nat. Commun. 11: 2898.
10. Bostanabad, S.Y., et al. 2021. Overexpression of β-Arrestins inhibits proliferation and motility in triple negative breast cancer cells. Sci. Rep. 11: 1539.

RESEARCH USE

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