SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin B1 (0.N.238): sc-70898

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; 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 (0.N.238) is a mouse monoclonal antibody raised against a recombinant protein corresponding to human cyclin B1.

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.

APPLICATIONS

cyclin B1 (0.N.238) 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) and kinase assay.

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.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa nuclear extract: sc-2120 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.

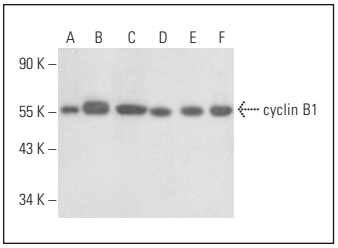
PROTOCOLS

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

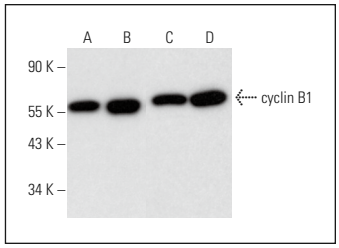
RESEARCH USE

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

DATA



cyclin B1 (0.N.238): sc-70898. Western blot analysis of cyclin B1 expression in Jurkat (**A**) and HeLa (**B**) nuclear extracts and K-562 (**C**), HCT-116 (**D**), OVCAR-3 (**E**) and MM-142 (**F**) whole cell lysates.



cyclin B1 (0.N.238): sc-70898. Western blot analysis of cyclin B1 expression in HeLa (**A**) and Jurkat (**B**) nuclear extracts and HeLa (**C**) and Daudi (**D**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

SELECT PRODUCT CITATIONS

1. Reinson, T., et al. 2013. Engagement of the ATR-dependent DNA damage response at the human papillomavirus 18 replication centers during the initial amplification. J. Virol. 87: 951-964.
2. Ma, D., et al. 2017. 1, $25(OH)_2D_3$-induced interaction of vitamin D receptor with p50 subunit of NFκB suppresses the interaction between KLF5 and p50, contributing to inhibition of LPS-induced macrophage proliferation. Biochem. Biophys. Res. Commun. 482: 366-374.
3. Shan, D., et al. 2018. Long noncoding RNA BLACAT1 promotes cell proliferation and invasion in human cervical cancer. Oncol. Lett. 15: 3490-3495.
4. Dong, Z., et al. 2019. MYST1/KAT8 contributes to tumor progression by activating EGFR signaling in glioblastoma cells. Cancer Med. 8: 7793-7808.
5. Yu, J., et al. 2020. Regulation of sister chromatid cohesion by nuclear PD-L1. Cell Res. 30: 590-601.
6. El-Wetidy, M.S., et al. 2021. Urolithin A induces cell cycle arrest and apoptosis by inhibiting Bcl-2, increasing p53-p21 proteins and reactive oxygen species production in colorectal cancer cells. Cell Stress Chaperones 26: 473-493.
7. Vaali-Mohammed, M.A., et al. 2022. The anticancer effects of the pro-apoptotic benzofuran-isatin conjugate (5a) are associated with p53 upregulation and enhancement of conventional chemotherapeutic drug efficiency in colorectal cancer cell lines. Front. Pharmacol. 13: 923398.
8. Wen, T., et al. 2023. KPT-330 and Y219 exert a synergistic anti-tumor effect in triple-negative breast cancer through inhibiting NFκB signaling. FEBS Open Bio 13: 751-762.

CONJUGATES

See **cyclin B1 (GNS1): sc-245** for cyclin B1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.