SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin B1 (G-11): sc-166757

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 estalished 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.

SOURCE

cyclin B1 (G-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 400-433 at the C-terminus of cyclin B1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166757 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

cyclin B1 (G-11) is recommended for detection of cyclin B1 of human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

Molecular Weight of cyclin B1: 60 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HCT-116 whole cell lysate: sc-364175 or NCI-H460 whole cell lysate: sc-364235.

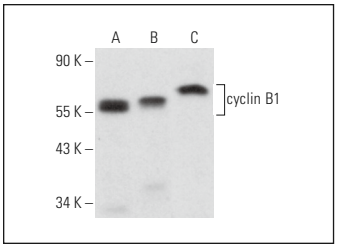
STORAGE

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

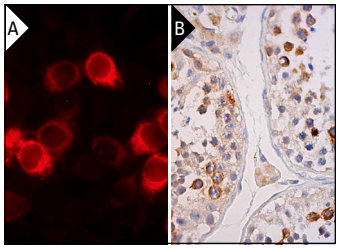
RESEARCH USE

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

DATA



cyclin B1 (G-11): sc-166757. Western blot analysis of cyclin B1 expression in HCT-116 (**A**), HeLa (**B**) and NCI-H460 (**C**) whole cell lysates.



cyclin B1 (G-11): sc-166757. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of cells in seminiferous ducts and Leydig cells (**B**).

SELECT PRODUCT CITATIONS

1. Kim, M., et al. 2012. Maspin genetically and functionally associates with gastric cancer by regulating cell cycle progression. Carcinogenesis 33: 2344-2350.
2. Xiang, Q., et al. 2017. Suppression of FOXM1 transcriptional activities via a single-stranded DNA aptamer generated by SELEX. Sci. Rep. 7: 45377.
3. Wang, J., et al. 2018. The FOXK1-CCDC43 axis promotes the invasion and metastasis of colorectal cancer cells. Cell. Physiol. Biochem. 51: 2547-2563.
4. Tang, W., et al. 2019. The p300/YY1/miR-500a-5p/HDAC2 signalling axis regulates cell proliferation in human colorectal cancer. Nat. Commun. 10: 663.
5. Pajuelo-Lozano, N., et al. 2020. Targeting MAD2 modulates stemness and tumorigenesis in human Gastric cancer cell lines. Theranostics 10: 9601-9618.
6. Pangou, E., et al. 2021. A PKD-MFF signaling axis couples mitochondrial fission to mitotic progression. Cell Rep. 35: 109129.
7. Hussain, M., et al. 2022. A small-molecule Skp1 inhibitor elicits cell death by p53-dependent mechanism. iScience 25: 104591.
8. Zhang, Q., et al. 2023. The prognostic value of ADAMTS8 and its role as a tumor suppressor in breast cancer. Cancer Invest. 41: 119-132.
9. Liao, Y., et al. 2024. UBAP2L ensures homeostasis of nuclear pore complexes at the intact nuclear envelope. J. Cell Biol. 223: e202310006.
10. Mensah, G.A., et al. 2025. Effect of kinases in extracellular vesicles from HIV-1-infected cells on bystander cells. Cells 14: 119.

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.