

cyclin B1 (D-11): sc-7393

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 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.

REFERENCES

- Murray, A.W., et al. 1989. Dominoes and clocks: the union of two views of the cell cycle. *Science* 246: 614-621.
- Morla, A.O., et al. 1989. Reversible tyrosine phosphorylation of Cdc2: dephosphorylation accompanies activation during entry into mitosis. *Cell* 58: 193-203.

CHROMOSOMAL LOCATION

Genetic locus: CCNB1 (human) mapping to 5q13.2; Ccnb1 (mouse) mapping to 13 D1.

SOURCE

cyclin B1 (D-11) is a mouse monoclonal antibody raised against amino acids 1-433 of cyclin B1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

cyclin B1 (D-11) is available conjugated to agarose (sc-7393 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-7393 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-7393 PE), fluorescein (sc-7393 FITC), Alexa Fluor[®] 488 (sc-7393 AF488), Alexa Fluor[®] 546 (sc-7393 AF546), Alexa Fluor[®] 594 (sc-7393 AF594) or Alexa Fluor[®] 647 (sc-7393 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-7393 AF680) or Alexa Fluor[®] 790 (sc-7393 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, cyclin B1 (D-11) is available conjugated to Alexa Fluor[®] 405 (sc-7393 AF405), 100 µg/2 ml, for IF, IHC(P) and FCM.

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

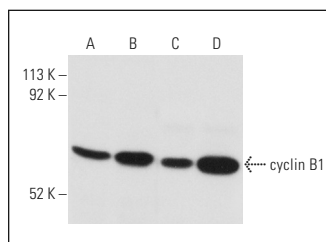
cyclin B1 (D-11) is recommended for detection of cyclin B1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10⁶ cells).

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.

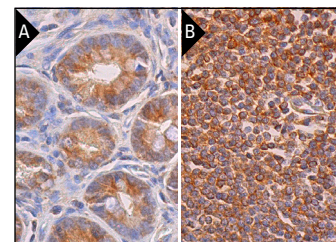
Molecular Weight of cyclin B1: 60 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, HeLa nuclear extract: sc-2120 or HeLa whole cell lysate: sc-2200.

DATA



cyclin B1 (D-11): sc-7393. Western blot analysis of cyclin B1 expression in lysates prepared from untreated (A, C) and etoposide-treated (B, D) HeLa (A, B) and K-562 (C, D) whole cell lysates.



cyclin B1 (D-11): sc-7393. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoplasmic staining of glandular cells and endothelial cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic staining of cells in non-germinal center (B).

SELECT PRODUCT CITATIONS

- DiFederico, E., et al. 1999. Preeclampsia is associated with widespread apoptosis of placental cytotrophoblasts within the uterine wall. *Am. J. Pathol.* 155: 293-301.
- Kumar, V., et al. 2017. Role of A-kinase anchor protein (AKAP4) in growth and survival of ovarian cancer cells. *Oncotarget* 8: 53124-53136.
- Fu, S., et al. 2018. Effect of sinomenine hydrochloride on radiosensitivity of esophageal squamous cell carcinoma cells. *Oncol. Rep.* 39: 1601-1608.
- Kundumani-Sridharan, V., et al. 2019. Short-duration hyperoxia causes genotoxicity in mouse lungs: protection by volatile anesthetic isoflurane. *Am. J. Physiol. Lung Cell. Mol. Physiol.* 316: L903-L917.
- Wang, S., et al. 2020. MicroRNA-718 serves a tumor-suppressive role in non-small cell lung cancer by directly targeting CCNB1. *Int. J. Mol. Med.* 45: 33-44.

RESEARCH USE

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