SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin D1 (72-13G): sc-450

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The proliferation of eukaryotic cells is controlled at specific points in the cell cycle, particularly at the G_1 to S and the G_2 to M transitions. It is well established that the Cdc2 p34-cyclin B protein kinase plays a critical role in the G_2 to M transition while cyclin A associates with Cdk2 p33 and functions in S phase. Considerable effort directed towards the identification of G_1 cyclins has led to the isolation of cyclin D, cyclin C and cyclin E. Of these, cyclin D corresponds to a putative human oncogene, designated PRAD1, which maps at the site of the Bcl-1 rearrangement in certain lymphomas and leukemias. Two additional human type D cyclins, as well as their mouse homologs, have been identified. Evidence has established that members of the cyclin D family function to regulate phosphorylation of the retinoblastoma gene product, thereby activating E2F transcription factors.

CHROMOSOMAL LOCATION

Genetic locus: CCND1 (human) mapping to 11q13.3; Ccnd1 (mouse) mapping to 7 F5.

SOURCE

cyclin D1 (72-13G) is a mouse monoclonal antibody raised against recombinant fusion protein of mouse 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 D1 (72-13G) is available conjugated to agarose (sc-450 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-450 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-450 PE), fluorescein (sc-450 FITC), Alexa Fluor® 488 (sc-450 AF488), Alexa Fluor® 546 (sc-450 AF546), Alexa Fluor® 594 (sc-450 AF594) or Alexa Fluor® 647 (sc-450 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-450 AF680) or Alexa Fluor® 790 (sc-450 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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

APPLICATIONS

cyclin D1 (72-13G) is recommended for detection of cyclin D1 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; non cross-reactive with cyclin D2 or cyclin D3 encoded proteins.

Suitable for use as control antibody for cyclin D1 siRNA (h): sc-29286, cyclin D1 siRNA (m): sc-29287, cyclin D1 shRNA Plasmid (h): sc-29286-SH, cyclin D1 shRNA Plasmid (m): sc-29287-SH, cyclin D1 shRNA (h) Lentiviral Particles: sc-29286-V and cyclin D1 shRNA (m) Lentiviral Particles: sc-29287-V.

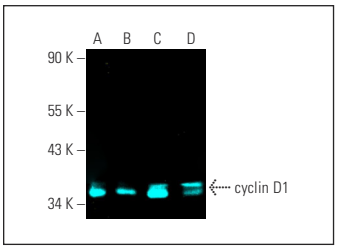
Molecular Weight of cyclin D1: 37 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, J774.A1 cell lysate: sc-3802 or 3611-RF whole cell lysate: sc-2215.

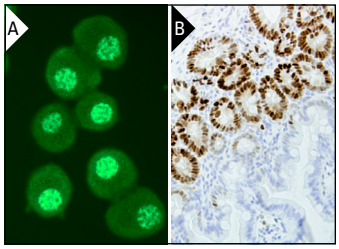
STORAGE

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

DATA



cyclin D1 (72-13G) Alexa Fluor® 647: sc-450 AF647. Direct fluorescent western blot analysis of cyclin D1 expression in RAW 264.7 (**A**), J774.A1 (**B**), 3611-RF (**C**) and KNRK (**D**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



cyclin D1 (72-13G): sc-450. Immunofluorescence staining of methanol-fixed KNRK cells showing mostly nuclear localization (**A**). Nuclear cyclin D1 in small intestinal adenoma in APC min/+ (20X microscopic magnification). Dilution: 1:80 in buffer (0.05% BSA in PBS). Blocking: 0.1% BSA in PBS at room temp. Kindly provided by Dr. Albert J. Fornace Jr., Georgetown University (**B**).

SELECT PRODUCT CITATIONS

1. DeGregori, J., et al. 1995. E2F-1 accumulation bypasses a G_1 arrest resulting from the inhibition of G_1 cyclin-dependent kinase activity. Genes Dev. 9: 2873-2887.
2. Yoshida, A., et al. 2013. CSN5 specifically interacts with CDK2 and controls senescence in a cytoplasmic cyclin E-mediated manner. Sci. Rep. 3: 1054.
3. Joliot, V., et al. 2014. The SWI/SNF subunit/tumor suppressor BAF47/INI1 is essential in cell cycle arrest upon skeletal muscle terminal differentiation. PLoS ONE 9: e108858.
4. Privette Vinnedge, L.M., et al. 2015. The DEK oncogene promotes cellular proliferation through paracrine Wnt signaling in Ron receptor-positive breast cancers. Oncogene 34: 2325-2336.
5. Park, J.H., et al. 2016. Promotion of intestinal epithelial cell turnover by commensal bacteria: role of short-chain fatty acids. PLoS ONE 11: e0156334.
6. Zhang, Y., et al. 2017. MicroRNA-720 inhibits pancreatic cancer cell proliferation and invasion by directly targeting cyclin D1. Mol. Med. Rep. 16: 9256-9262.
7. Xiao, T., et al. 2018. RACK1 promotes tumorigenicity of colon cancer by inducing cell autophagy. Cell Death Dis. 9: 1148.
8. Foronda, M., et al. 2019. Tankyrase inhibition sensitizes cells to CDK4 blockade. PLoS ONE 14: e0226645.
9. Yan, X., et al. 2020. MiR-181a functions as an oncogene by regulating CCND1 in multiple myeloma. Oncol. Lett. 20: 758-764.

RESEARCH USE

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