SANTA CRUZ BIOTECHNOLOGY, INC.

# cyclin D1 (A-12): sc-8396

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 Bcl1 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.

## REFERENCES


1. Draetta, G. 1990. Cell cycle control in eukaryotes: molecular mechanisms of Cdc2 activation. Trends Biol. Sci. 15: 378-383.
2. Xiong, Y., et al. 1991. Human D-type cyclin. Cell 65: 691-699.
3. Xiong, Y., et al. 1992. Molecular cloning and chromosomal mapping of CCND genes encoding human D-type cyclins. Genomics 13: 575-584.


## CHROMOSOMAL LOCATION

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

## SOURCE

cyclin D1 (A-12) is a mouse monoclonal antibody raised against amino acids 1-295 representing full length cyclin D1 of human origin.

## PRODUCT

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

cyclin D1 (A-12) is available conjugated to agarose (sc-8396 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-8396 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8396 PE), fluorescein (sc-8396 FITC), Alexa Fluor® 488 (sc-8396 AF488), Alexa Fluor® 546 (sc-8396 AF546), Alexa Fluor® 594 (sc-8396 AF594) or Alexa Fluor® 647 (sc-8396 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8396 AF680) or Alexa Fluor® 790 (sc-8396 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, cyclin D1 (A-12) is available conjugated to either TRITC (sc-8396 TRITC, 200 µg/ml) or Alexa Fluor® 405 (sc-8396 AF405), 100 µg/2 ml, for IF, IHC(P) and FCM.



## STORAGE

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

## APPLICATIONS

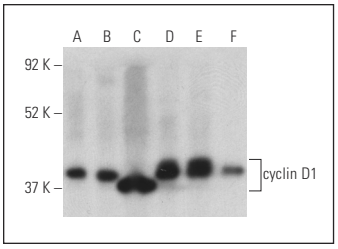
cyclin D1 (A-12) is recommended for detection of cyclin D1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x $10^6$ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); weakly cross-reative with cyclin D2; non cross-reactive with cyclin D3.

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.

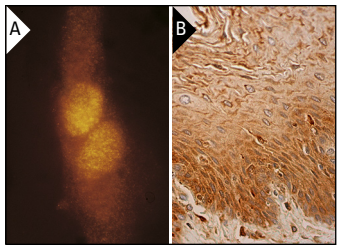
Molecular Weight of cyclin D1: 37 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812, C32 nuclear extract: sc-2136 or RAW 264.7 whole cell lysate: sc-2211.

## DATA




cyclin D1 (A-12): sc-8396. Western blot analysis of cyclin D1 expression in SH-SY5Y (**A**), HCT-116 (**B**), SP2/0 (**C**), RAW 264.7 (**D**) and KNRK (**E**) whole cell lysates and C32 nuclear extract (**F**). Detection reagent used: m-$IgG_{2b}$ BP-HRP: sc-542741.




cyclin D1 (A-12): sc-8396. Immunofluorescence staining of methanol-fixed C32 cells with rhodamine showing nuclear localization of cyclin D1 (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing nuclear and cytoplasmic staining of squamous epithelial cells (**B**).

## SELECT PRODUCT CITATIONS


1. Osuga, H., et al. 2000. Cyclin-dependent kinases as a therapeutic target for stroke. Proc. Natl. Acad. Sci. USA 97: 10254-10259.
2. Márton, M., et al. 2018. NRF2-regulated cell cycle arrest at early stage of oxidative stress response mechanism. PLoS ONE 13: e0207949.
3. Chen, Y.C., et al. 2019. High glucose concentrations negatively regulate the IGF1R/Src/ERK axis through the microRNA-9 in colorectal cancer. Cells 8: 326.
4. Mo, X.M., et al. 2020. miR-421 promotes the viability of A549 lung cancer cells by targeting forkhead box O1. Oncol. Lett. 20: 306.
5. Meng, Y., et al. 2021. CCT5 interacts with cyclin D1 promoting lung adenocarcinoma cell migration and invasion. Biochem. Biophys. Res. Commun. 567: 222-229.


## RESEARCH USE

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