

cyclin D3 (1): sc-135875



The Power to Question

BACKGROUND

The proliferation of eukaryotic cells is controlled at specific points in the cell cycle, particularly at the G₁ to S and the G₂ to M transitions. It is well established that the Cdc2 p34-cyclin B protein kinase plays a critical role in the G₂ to M transition while cyclin A associates with Cdk2 p33 and functions in S phase. Considerable effort directed towards the identification of G₁ 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.

REFERENCES

1. Draetta, G. 1990. Cell cycle control in eukaryotes: molecular mechanisms of Cdc2 activation. *Trends Biochem. Sci.* 15: 378-383.
2. Xiong, Y., et al. 1991. Human D-type cyclin. *Cell* 65: 691-699.
3. Kiyokawa, H., et al. 1992. Cloning of a D-type cyclin from murine erythroleukemia cells. *Proc. Natl. Acad. Sci. USA* 89: 2444-2447.
4. Won, K., et al. 1992. Growth-regulated expression of D-type cyclin genes in human diploid fibroblasts. *Proc. Natl. Acad. Sci. USA* 89: 9910-9914.
5. Inaba, T., et al. 1992. Genomic organization, chromosomal localization, and independent expression of human cyclin D genes. *Genomics* 13: 565-574.
6. Xiong, Y., et al. 1992. Molecular cloning and chromosomal mapping of CCND genes encoding human D-type cyclins. *Genomics* 13: 575-584.
7. Motokura, T., et al. 1992. Cloning and characterization of human cyclin D3, a cDNA closely related in sequence to the PRAD1/cyclin D1 proto-oncogene. *J. Biol. Chem.* 267: 20412-20415.
8. Ewen, M.E., et al. 1993. Functional interactions of the retinoblastoma protein with mammalian D-type cyclins. *Cell* 73: 487-497.
9. Dowdy, S.F., et al. 1993. Physical interaction of the retinoblastoma protein with human D cyclins. *Cell* 73: 499-511.

CHROMOSOMAL LOCATION

Genetic locus: CCND3 (human) mapping to 6p21.1; Ccnd3 (mouse) mapping to 17 C.

SOURCE

cyclin D3 (1) is a mouse monoclonal antibody raised against amino acids 127-292 of cyclin D3 of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2b} in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

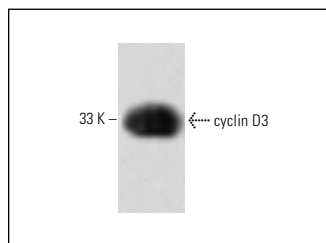
cyclin D3 (1) is recommended for detection of cyclin D3 of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for cyclin D3 siRNA (h): sc-35136, cyclin D3 siRNA (m): sc-35137, cyclin D3 shRNA Plasmid (h): sc-35136-SH, cyclin D3 shRNA Plasmid (m): sc-35137-SH, cyclin D3 shRNA (h) Lentiviral Particles: sc-35136-V and cyclin D3 shRNA (m) Lentiviral Particles: sc-35137-V.

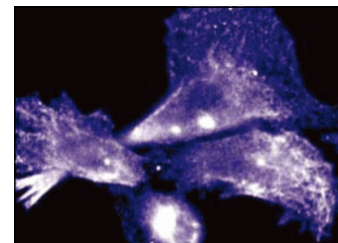
Molecular Weight of cyclin D3: 33 kDa.

Positive Controls: HeLa + PMA nuclear extract: sc-2121, K-562 + PMA nuclear extract: sc-2131 or Jurkat + PMA nuclear extract: sc-2133.

DATA



cyclin D3 (1): sc-135875. Western blot analysis of cyclin D3 expression in RSV-3T3 whole cell lysate.



cyclin D3 (1): sc-135875. Immunofluorescence staining of human endothelial cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Muñoz-Alonso, M.J., et al. 2012. MYC accelerates p21^{CIP}-induced megakaryocytic differentiation involving early mitosis arrest in leukemia cells. *J. Cell. Physiol.* 227: 2069-2078.
2. Shan, L., et al. 2014. GATA3 cooperates with PARP1 to regulate CCND1 transcription through modulating Histone H1 incorporation. *Oncogene* 33: 3205-3216.
3. Fang, C., et al. 2019. HES3 enhances the malignant phenotype of lung cancer through upregulating cyclin D1, cyclin D3 and MMP7 expression. *Int. J. Med. Sci.* 16: 470-476.
4. Rasekh, P., et al. 2023. Proliferative effect of aqueous extract of sea cucumber (*Holothuria parva*) body wall on human umbilical cord mesenchymal stromal/stem cells. *Mar. Drugs* 21: 267.

STORAGE

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



See **cyclin D3 (D-7): sc-6283** for cyclin D3 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.