

# cyclin D1 (1-295): sc-4074 WB

## BACKGROUND

The proliferation of eukaryotic cells is controlled at specific points in the cell cycle, particularly at the G<sub>1</sub> to S and the G<sub>2</sub> to M transitions. It is well established that the Cdc2 p34-cyclin B protein kinase plays a critical role in the G<sub>2</sub> to M transition while cyclin A associates with Cdk2 p33 and functions in S phase. Considerable effort directed towards the identification of G<sub>1</sub> 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 react differentially with the retinoblastoma gene product.

## 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 erthroleukemia 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. Motokura, T.K., 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.
6. Inaba, T., et al. 1992. Genomic organization, chromosomal localization, and independent expression of human cyclin D genes. *Genomics* 13: 565-574.
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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.

## SOURCE

cyclin D1 (1-295) is expressed in *E. coli* as a 61 kDa tagged fusion protein corresponding to amino acids 1-295 representing full length cyclin D1 protein of human origin.

## PRODUCT

cyclin D1 (1-295) is purified from bacterial lysates (> 98%) by glutathione agarose affinity chromatography; supplied as 10 µg in 0.1 ml SDS-PAGE loading buffer.

## STORAGE

Store at -20° C; stable for one year from the date of shipment.

## RESEARCH USE

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

## APPLICATIONS

cyclin D1 (1-295) is suitable as a Western blotting control for sc-246, sc-718, sc-753 and sc-8396.

## SELECT PRODUCT CITATIONS

1. Jiang, L., et al. 2017. TrkB promotes laryngeal cancer metastasis via activation PI3K/Akt pathway. *Oncotarget* 8: 108726-108737.
2. Ji, Z.P., et al. 2018. Transcription activated p73-modulated cyclin D1 expression leads to doxorubicin resistance in gastric cancer. *Exp. Ther. Med.* 15: 1831-1838.
3. Ren, Z., et al. 2019. MiR-421 promotes the development of osteosarcoma by regulating MCP1 expression. *Cancer Biol. Ther.* 12: 1-10.
4. Huang, W., et al. 2019. The miR-26a/AP-2α/Nanog signaling axis mediates stem cell self-renewal and temozolomide resistance in glioma. *Theranostics* 9: 5497-5516.
5. Song, J.L., et al. 2020. Dietary mixed cereal grains ameliorate the azoxymethane and dextran sodium sulfate-induced colonic carcinogenesis in C57BL/6J mice. *J. Med. Food* 23: 440-452.

## PROTOCOLS

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