SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin D1 (M-20): sc-718

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, CCND2 (human) mapping to 12p13.32; Ccnd1 (mouse) mapping to 7 F5, Ccnd2 (mouse) mapping to 6 F3.

SOURCE

cyclin D1 (M-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of cyclin D1 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-718 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

cyclin D1 (M-20) is recommended for detection of cyclin D1 and, to a lesser extent, cyclin D2 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of cyclin D1: 37 kDa.

Positive Controls: cyclin D1 (h4): 293T Lysate: sc-171254, C32 nuclear extract: sc-2136 or KNRK nuclear extract: sc-2141.

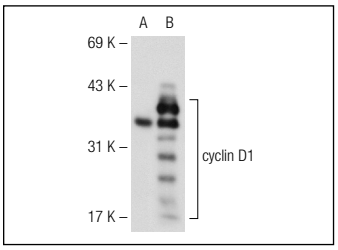
RESEARCH USE

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

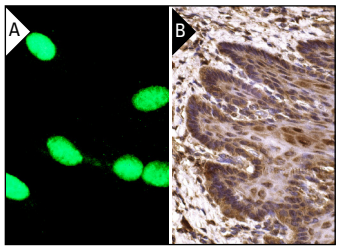
STORAGE

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

DATA



cyclin D1 (M-20): sc-718. Western blot analysis of cyclin D1 expression in non-transfected: sc-117752 (**A**) and human cyclin D1 transfected: sc-171254 (**B**) 293T whole cell lysates.



cyclin D1 (M-20): sc-718. Immunofluorescence staining of methanol-fixed C32 cells showing nuclear localization (**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. Seong, J., et al. 1999. Assessment of biomarkers in paired primary and recurrent colorectal adenocarcinomas. Int. J. Radiat. Oncol. Biol. Phys. 45: 1167-1173.
2. Liu, S.T., et al. 2012. A non-covalent interaction between small ubiquitin-like modifier-1 and Zac1 regulates Zac1 cellular functions. Int. J. Biochem. Cell Biol. 44: 547-555.
3. Lappano, R., et al. 2012. MIBE acts as antagonist ligand of both estrogen receptor α and GPER in breast cancer cells. Breast Cancer Res. 14: R12.
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5. De Marco, P., et al. 2012. Insulin-like growth factor-I regulates GPER expression and function in cancer cells. Oncogene 32: 678-688.
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10. Mukhopadhyay, P., et al. 2013. MUC4 overexpression augments cell migration and metastasis through EGFR family proteins in triple negative breast cancer cells. PLoS ONE 8: e54455.
11. Dufour, J., et al. 2013. Lack of liver x receptors leads to cell proliferation in a model of mouse dorsal prostate epithelial cell. PLoS ONE 8: e58876.