SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin D1 (DCS-6): sc-20044

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.

CHROMOSOMAL LOCATION

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

SOURCE

cyclin D1 (DCS-6) is a mouse monoclonal antibody raised against recombinant full length human protein.

PRODUCT

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

cyclin D1 (DCS-6) is available conjugated to either phycoerythrin (sc-20044 PE), fluorescein (sc-20044 FITC), Alexa Fluor® 488 (sc-20044 AF488), Alexa Fluor® 546 (sc-20044 AF546), Alexa Fluor® 594 (sc-20044 AF594) or Alexa Fluor® 647 (sc-20044 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-20044 AF680) or Alexa Fluor® 790 (sc-20044 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

cyclin D1 (DCS-6) 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).

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.

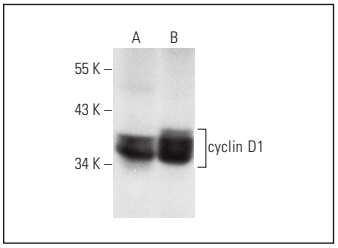
Molecular Weight of cyclin D1: 37 kDa.

Positive Controls: C32 nuclear extract: sc-2136, Jurkat whole cell lysate: sc-2204 or KNRK nuclear extract: sc-2141.

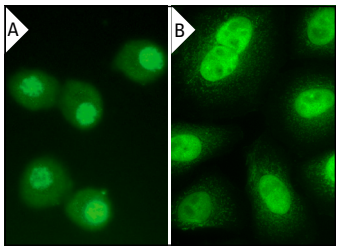
STORAGE

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

DATA



cyclin D1 (DCS-6): sc-20044. Western blot analysis of cyclin D1 expression in C32 (**A**) and KNRK (**B**) nuclear extracts.



cyclin D1 (DCS-6): sc-20044. Immunofluorescence staining of methanol-fixed KNRK cells showing mostly nuclear localization (**A**). cyclin D1 (DCS-6) Alexa Fluor® 488: sc-20044 AF488. Direct immunofluorescence staining of formalin-fixed HeLa cells showing nuclear localization (**B**).

SELECT PRODUCT CITATIONS

1. Jones, C.J., et al. 2000. Evidence for a telomere-independent "clock" limiting RAS oncogene-driven proliferation of human thyroid epithelial cells. Mol. Cell. Biol. 20: 5690-5699.
2. Mastorci, K., et al. 2016. Toll-like receptor 1/2 and 5 ligands enhance the expression of cyclin D1 and D3 and induce proliferation in mantle cell lymphoma. PLoS ONE 11: e0153823.
3. Li, X.X., et al. 2017. Knockdown of IRE1α inhibits colonic tumorigenesis through decreasing β-catenin and IRE1α targeting suppresses colon cancer cells. Oncogene 36: 6738-6746.
4. Tripathy, A., et al. 2018. The molecular connection of histopathological heterogeneity in hepatocellular carcinoma: a role of Wnt and Hedgehog signaling pathways. PLoS ONE 13: e0208194.
5. Li, Z., et al. 2019. Cyclin D1 integrates G_{9a}-mediated histone methylation. Oncogene 38: 4232-4249.
6. Hu, S.M., et al. 2020. 8-gingerol regulates colorectal cancer cell proliferation and migration through the EGFR/Stat/ERK pathway. Int. J. Oncol. 56: 390-397.
7. Liu, Y.Y., et al. 2021. Thyroid hormone receptor α sumoylation modulates white adipose tissue stores. Sci. Rep. 11: 24105.
8. Chu, T.H., et al. 2022. Leukocyte cell-derived chemotaxin 2 regulates epithelial-mesenchymal transition and cancer stemness in hepatocellular carcinoma. J. Biol. Chem. 298: 102442.
9. Yun, H.M., et al. 2023. Machilin D promotes apoptosis and autophagy, and inhibits necroptosis in human oral squamous cell carcinoma cells. Int. J. Mol. Sci. 24: 4576.

RESEARCH USE

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