SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin D2 (34B1-3): sc-452

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: CCND2 (human) mapping to 12p13.32, CCND1 (human) mapping to 11q13.3; Ccnd2 (mouse) mapping to 6 F3, Ccnd1 (mouse) mapping to 7 F5.

SOURCE

cyclin D2 (34B1-3) is a rat monoclonal antibody raised against recombinant cyclin D2 protein.

PRODUCT

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

cyclin D2 (34B1-3) is available conjugated to agarose (sc-452 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-452 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-452 PE), fluorescein (sc-452 FITC), Alexa Fluor® 488 (sc-452 AF488), Alexa Fluor® 546 (sc-452 AF546), Alexa Fluor® 594 (sc-452 AF594) or Alexa Fluor® 647 (sc-452 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-452 AF680) or Alexa Fluor® 790 (sc-452 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, cyclin D2 (34B1-3) is available conjugated to TRITC (sc-452 TRITC, 200 µg/ml), for IF, IHC(P) and FCM.

APPLICATIONS

cyclin D2 (34B1-3) is recommended for detection of cyclin D2 and, to a lesser extent, 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with cyclin D3.

Molecular Weight of cyclin D2: 34 kDa.

Positive Controls: cyclin D2 (h): 293T Lysate: sc-111616 or MM-142 nuclear extract: sc-2139.

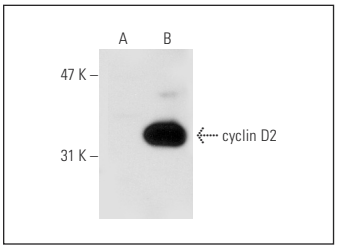
RESEARCH USE

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

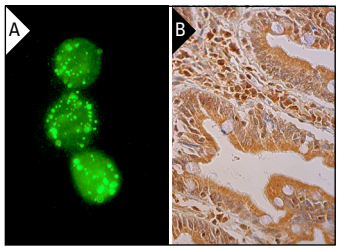
STORAGE

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

DATA



cyclin D2 (34B1-3): sc-452. Western blot analysis of cyclin D2 expression in non-transfected: sc-117752 (**A**) and human cyclin D2 transfected: sc-111616 (**B**) 293T whole cell lysates.



cyclin D2 (34B1-3): sc-452. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing nuclear and cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Ting, C.N., et al. 1996. Transcription factor GATA-3 is required for development of the T-cell lineage. Nature 384: 474-478.
2. Iwanaga, R., et al. 2008. Activation of the cyclin D2 and cdk6 genes through NFκB is critical for cell-cycle progression induced by HTLV-I Tax. Oncogene 27: 5635-5642.
3. Le, T.T., et al. 2009. Jagged 1 is necessary for normal mouse lens formation. Dev. Biol. 328: 118-126.
4. Levidou, G., et al. 2010. D-type cyclins in superficial and muscle-invasive bladder urothelial carcinoma: correlation with clinicopathological data and prognostic significance. J. Cancer Res. Clin. Oncol. 136: 1563-1571.
5. Le, T.T., et al. 2012. Requirements for Jag1-Rbpj mediated Notch signaling during early mouse lens development. Dev. Dyn. 241: 493-504.
6. Antosova, B., et al. 2013. Ectopic activation of Wnt/β-catenin signaling in lens fiber cells results in cataract formation and aberrant fiber cell differentiation. PLoS ONE 8: e78279.
7. Wang, Q., et al. 2016. Ipsilateral and contralateral retinal ganglion cells express distinct genes during decussation at the optic chiasm. eNeuro 3: ENEURO.0169-16.2016.
8. Hosseini, M., et al. 2018. Energy metabolism rewiring precedes UVB-induced primary skin tumor formation. Cell Rep. 23: 3621-3634.
9. Mahfouf, W., et al. 2019. Loss of epidermal HIF-1α blocks UVB-induced tumorigenesis by affecting DNA repair capacity and oxidative stress. J. Invest. Dermatol. 139: 2016-2028.e7.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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