SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin D3 (DCS-22): sc-56307

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 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.

CHROMOSOMAL LOCATION

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

SOURCE

cyclin D3 (DCS-22) is a mouse monoclonal antibody raised against full length recombinant cyclin D3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

cyclin D3 (DCS-22) is available conjugated to agarose (sc-56307 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-56307 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-56307 PE), fluorescein (sc-56307 FITC), Alexa Fluor® 488 (sc-56307 AF488), Alexa Fluor® 546 (sc-56307 AF546), Alexa Fluor® 594 (sc-56307 AF594) or Alexa Fluor® 647 (sc-56307 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-56307 AF680) or Alexa Fluor® 790 (sc-56307 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

cyclin D3 (DCS-22) is recommended for detection of cyclin D3 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).

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.

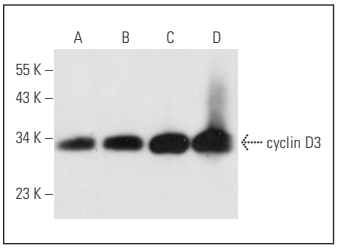
Molecular Weight of cyclin D3: 33 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, Jurkat whole cell lysate: sc-2204 or C6 whole cell lysate: sc-364373.

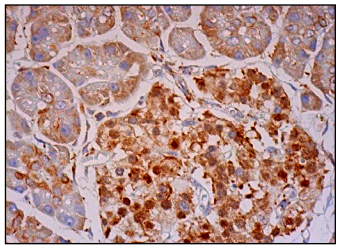
STORAGE

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

DATA



cyclin D3 (DCS-22): sc-56307. Western blot analysis of cyclin D3 expression in C6 (**A**), K-562 (**B**), PMA treated K-562 (**C**) and Jurkat (**D**) whole cell lysates.



cyclin D3 (DCS-22): sc-56307. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of exocrine glandular cells and cytoplasmic and nuclear staining of Islets of Langerhans.

SELECT PRODUCT CITATIONS

1. Russell, A., et al. 1999. Cyclin D1 and D3 associate with the SCF complex and are coordinately elevated in breast cancer. Oncogene 18: 1983-1991.
2. Depoortere, F., et al. 2000. Transforming growth factor β1 selectively inhibits the cyclic AMP-dependent proliferation of primary thyroid epithelial cells by preventing the association of cyclin D3-Cdk4 with nuclear $p27^{Kip1}$. Mol. Biol. Cell 11: 1061-1076.
3. Busk, P.K., et al. 2002. Involvement of cyclin D activity in left ventricle hypertrophy *in vivo* and *in vitro*. Cardiovasc. Res. 56: 64-75.
4. Wu, W., et al. 2009. Antibody array analysis with label-based detection and resolution of protein size. Mol. Cell. Proteomics 8: 245-257.
5. Metcalf, R.A., et al. 2010. Characterization of D-cyclin proteins in hematolymphoid neoplasms: lack of specificity of cyclin-D2 and D3 expression in lymphoma subtypes. Mod. Pathol. 23: 420-433.
6. Alhejaily, A., et al. 2011. Differential expression of cell-cycle regulatory proteins defines distinct classes of follicular lymphoma. Hum. Pathol. 42: 972-982.
7. Dong, X., et al. 2015. Aspartate β-hydroxylase expression promotes a malignant pancreatic cellular phenotype. Oncotarget 6: 1231-1248.
8. Colleoni, B., et al. 2017. JNKs function as CDK4-activating kinases by phosphorylating CDK4 and p21. Oncogene 36: 4349-4361.

RESEARCH USE

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

PROTOCOLS

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