SANTA CRUZ BIOTECHNOLOGY, INC.

Cdk2 (D-12): sc-6248

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

In vertebrates, as in yeast, multiple cyclins have been identified, including a total of eight such regulatory proteins in mammals. In contrast to the situation in yeast, the Cdc2 p34 kinase is not the only catalytic subunit identified in vertebrates that can interact with cyclins. While Cdc2 p34 is essential for the G_2 to M transition in vertebrate cells, a second Cdc2-related kinase has also been implicated in cell cycle control. This protein, designated cyclin-dependent kinase 2 (Cdk2) p33, also binds to cyclins and its kinase activity is temporally regulated during the cell cycle. Several additional Cdc2 p34-related cyclin dependent kinases have been identified. These include Cdk3-Cdk8, PCTAIRE-1–3 and KKIALRE.

CHROMOSOMAL LOCATION

Genetic locus: CDK2 (human) mapping to 12q13.2; Cdk2 (mouse) mapping to 10 D3.

SOURCE

Cdk2 (D-12) is a mouse monoclonal antibody raised against amino acids 1-298 representing full length Cdk2 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.

Cdk2 (D-12) is available conjugated to agarose (sc-6248 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-6248 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-6248 PE), fluorescein (sc-6248 FITC), Alexa Fluor® 488 (sc-6248 AF488), Alexa Fluor® 546 (sc-6248 AF546), Alexa Fluor® 594 (sc-6248 AF594) or Alexa Fluor® 647 (sc-6248 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-6248 AF680) or Alexa Fluor® 790 (sc-6248 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, Cdk2 (D-12) is available conjugated to either TRITC (sc-6248 TRITC, 200 µg/ml) or Alexa Fluor® 405 (sc-6248 AF405, 200 µg/ml), for IF, IHC(P) and FCM.

APPLICATIONS

Cdk2 (D-12) is recommended for detection of Cdk2 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Cdk2 siRNA (h): sc-29259, Cdk2 siRNA (m): sc-29260, Cdk2 shRNA Plasmid (h): sc-29259-SH, Cdk2 shRNA Plasmid (m): sc-29260-SH, Cdk2 shRNA (h) Lentiviral Particles: sc-29259-V and Cdk2 shRNA (m) Lentiviral Particles: sc-29260-V.

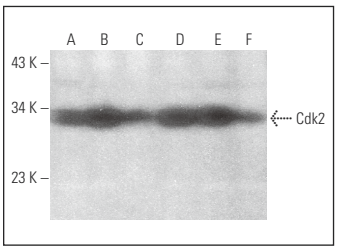
Molecular Weight of Cdk2: 34 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, MCF7 whole cell lysate: sc-2206 or HL-60 whole cell lysate: sc-2209.

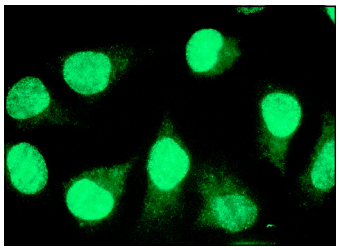
STORAGE

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

DATA



Cdk2 (D-12): sc-6248. Western blot analysis of Cdk2 expression in NIH/3T3 (**A**), MCF7 (**B**), SK-BR-3 (**C**), Jurkat (**D**), HL-60 (**E**) and Hep G2 (**F**) whole cell lysates.



Cdk2 (D-12): sc-6248. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Felzien, L., et al. 1999. Specificity of cyclin E-Cdk2, TFIIB, and E1A interactions with a common domain of the p300 coactivator. Mol. Cell. Biol. 19: 4241-4246.
2. Tang, J., et al. 2015. Upregulation of fractalkine contributes to the proliferative response of prostate cancer cells to hypoxia via promoting the G_1/S phase transition. Mol. Med. Rep. 12: 7907-7914.
3. Bao, H., et al. 2016. Huaier polysaccharide induces apoptosis in hepatocellular carcinoma cells through p38 MAPK. Oncol. Lett. 12: 1058-1066.
4. Zhao, X., et al. 2017. Artemether suppresses cell proliferation and induces apoptosis in diffuse large B cell lymphoma cells. Exp. Ther. Med. 14: 4083-4090.
5. Zhao, X., et al. 2018. HBV infection potentiates resistance to S-phase arrest-inducing chemotherapeutics by inhibiting CHK2 pathway in diffuse large B-cell lymphoma. Cell Death Dis. 9: 61.
6. Wang, Y., et al. 2019. The meiotic TERB1-TERB2-MAJIN complex tethers telomeres to the nuclear envelope. Nat. Commun. 10: 564.
7. Dewhurst, M.R., et al. 2020. Loss of hepatocyte cell division leads to liver inflammation and fibrosis. PLoS Genet. 16: e1009084.
8. Wu, X., et al. 2021. Distinct CDK6 complexes determine tumor cell response to CDK4/6 inhibitors and degraders. Nat. Cancer 2: 429-443.
9. Lin, Z., et al. 2022. Targeting SPHK1/PBX1 axis induced cell cycle arrest in non-small cell lung cancer. Int. J. Mol. Sci. 23: 12741.
10. Song, X., et al. 2023. Preclinical evaluation of tolvaptan and salsalate combination therapy in a Pkd1-mouse model. Front. Mol. Biosci. 10: 1058825.

RESEARCH USE

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