SANTA CRUZ BIOTECHNOLOGY, INC.

Cdk1/Cdk2 (AN21.2): sc-53219

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: CDK1 (human) mapping to 10q21.2, CDK2 (human) mapping to 12q13.2; Cdk1 (mouse) mapping to 10 B5.3, Cdk2 (mouse) mapping to 10 D3.

SOURCE

Cdk1/Cdk2 (AN21.2) is a mouse monoclonal antibody raised against recombinant Cdk2 of human origin.

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.

Cdk1/Cdk2 (AN21.2) is available conjugated to agarose (sc-53219 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53219 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53219 PE), fluorescein (sc-53219 FITC), Alexa Fluor® 488 (sc-53219 AF488), Alexa Fluor® 546 (sc-53219 AF546), Alexa Fluor® 594 (sc-53219 AF594) or Alexa Fluor® 647 (sc-53219 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53219 AF680) or Alexa Fluor® 790 (sc-53219 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Cdk1/Cdk2 (AN21.2) is recommended for detection of Cdk1/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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of Cdk1/Cdk2: 33 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa whole cell lysate: sc-2200 or NAMALWA cell lysate: sc-2234.

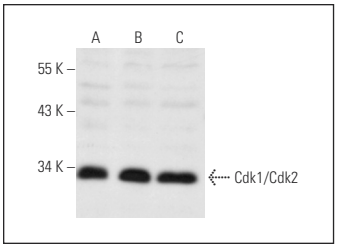
STORAGE

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

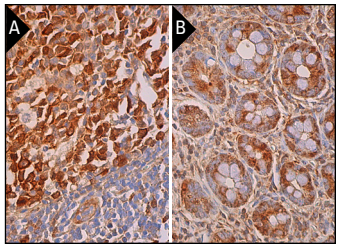
RESEARCH USE

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

DATA



Cdk1/Cdk2 (AN21.2): sc-53219. Western blot analysis of Cdk1/Cdk2 expression in K-562 (**A**), HeLa (**B**) and NAMALWA (**C**) whole cell lysates.



Cdk1/Cdk2 (AN21.2): sc-53219. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic and nuclear staining of cells in germinal center (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoplasmic staining of glandular cells and endothelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Malumbres, M., et al. 2004. Mammalian cells cycle without the D-type cyclin-dependent kinases Cdk4 and Cdk6. Cell 118: 493-504.
2. Liu, H., et al. 2013. Network analysis identifies an HSP90-central hub susceptible in ovarian cancer. Clin. Cancer Res. 19: 5053-5067.
3. Lin, Z.P., et al. 2014. Triapine disrupts CtIP-mediated homologous recombination repair and sensitizes ovarian cancer cells to PARP and topoisomerase inhibitors. Mol. Cancer Res. 12: 381-393.
4. Wu, C.C., et al. 2015. The topoisomerase 1 inhibitor austrobailignan-1 isolated from *Koelreuteria henryi* induces a G_2/M-Phase arrest and cell death independently of p53 in non-small cell lung cancer cells. PLoS ONE 10: e0132052.
5. Karpeta, A., et al. 2016. Different mechanisms of action of 2, 2', 4, 4'-tetrabromodiphenyl ether (BDE-47) and its metabolites (5-OH-BDE-47 and 6-OH-BDE-47) on cell proliferation in OVCAR-3 ovarian cancer cells and MCF-7 breast cancer cells. J. Appl. Toxicol. 36: 1558-1567.
6. Al-Hendy, A., et al. 2017. Silencing Med12 gene reduces proliferation of human leiomyoma cells mediated via Wnt/β-catenin signaling pathway. Endocrinology 158: 592-603.
7. Firmani, L.D., et al. 2018. The switch from cAMP-independent to cAMP-dependent arrest of meiotic prophase is associated with coordinated GPR3 and CDK1 expression in mouse oocytes. Dev. Biol. 434: 196-205.
8. Tang, J., et al. 2019. Silencing of LIMD1 promotes proliferation and reverses cell adhesion-mediated drug resistance in non-Hodgkin's lymphoma. Oncol. Lett. 17: 2993-3000.

PROTOCOLS

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