SANTA CRUZ BIOTECHNOLOGY, INC.

p21 (H-164): sc-756

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

It is now well established that cyclins play a positive role in promoting cell cycle transitions via their ability to associate with and activate their cognate cyclin-dependent kinases (Cdks). Cdk2 associates with cyclins A, D and E and has been implicated in the control of the G_1 to S phase transition in mammals. A novel Cdk-interacting protein, p21 (also designated WAF1/CIP1), has been identified in cyclin A, cyclin D1, cyclin E and Cdk2 immunoprecipitates. p21 is a potent, tight-binding inhibitor of Cdks and can inhibit the phosphorylation of Rb by cyclin A-Cdk 2, cyclin E-Cdk2, cyclin D1-Cdk4 and cyclin D2-Cdk4 complexes. Expression of p21 is inducible by wildtype, but not mutant, p53. The mouse homolog of p21 is designated CAP20.

REFERENCES

1. Sherr, C.J. 1993. Mammalian G_1 cyclins. Cell 73: 1059-1065.
2. Harper, J.W., et al. 1993. The p21 Cdk-interacting protein Cip1 is a potent inhibitor of G_1 cyclin-dependent kinases. Cell 75: 805-816.

CHROMOSOMAL LOCATION

Genetic locus: CDKN1A (human) mapping to 6p21.2; Cdkn1a (mouse) mapping to 17 A3.3.

SOURCE

p21 (H-164) is a rabbit polyclonal antibody raised against amino acids 1-164 representing full length p21 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p21 (H-164) is recommended for detection of p21 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); partially cross-reactive with the related mitotic inhibitory protein, p27.

Suitable for use as control antibody for p21 siRNA (h): sc-29427, p21 siRNA (m): sc-29428, p21 shRNA Plasmid (h): sc-29427-SH, p21 shRNA Plasmid (m): sc-29428-SH, p21 shRNA (h) Lentiviral Particles: sc-29427-V and p21 shRNA (m) Lentiviral Particles: sc-29428-V.

Molecular Weight of p21: 21 kDa.

Positive Controls: C32 nuclear extract: sc-2136, C32 + PMA nuclear extract: sc-2137 or HeLa nuclear extract: sc-2120.

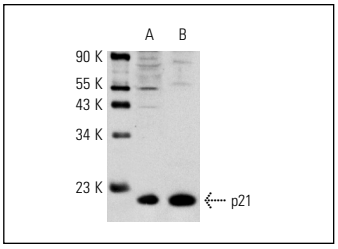
STORAGE

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

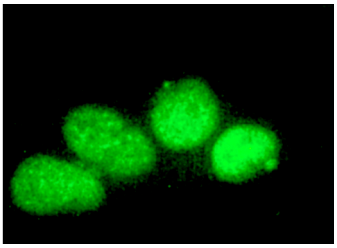
RESEARCH USE

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

DATA



Western blot analysis of p21 expression in C32 nuclear extracts (**A**,**B**). Antibodies tested include p21 (H-164): sc-756 (**A**) and p21 (C-19)-G: sc-397-G (**B**).



p21 (H-164): sc-756. Immunofluorescence staining of methanol-fixed C32 cells showing nuclear staining.

SELECT PRODUCT CITATIONS

1. Russell, A., et al. 1999. Inhibitory effect of p21 in MDF-7 cells is overcome by its coordinated stabilization with D-type cyclins. Oncogene 18: 6454-6459.
2. Su, D., et al. 2010. Role of p38 MAPK pathway in BMP4-mediated Smad-dependent premature senescence in lung cancer cells. Biochem. J. 433: 333-343.
3. Marcar, L., et al. 2010. Mage-A cancer/testis antigens inhibit p53 function by blocking its interaction with chromatin. Cancer Res. 70: 10362-10370.
4. Cho, S.J., et al. 2010. RNPC1 modulates the RNA-binding activity of, and cooperates with, HuR to regulate p21 mRNA stability. Nucleic Acids Res. 38: 2256-2267.
5. Sistrunk, C., et al. 2011. Skp2 is necessary for Myc-induced keratinocyte proliferation but dispensable for Myc oncogenic activity in the oral epithelium. Am. J. Pathol. 178: 2470-2477.
6. Sze, S.C., et al. 2011. Regulation of p21, MMP-1, and MDR-1 expression in human colon carcinoma HT29 cells by Tian Xian liquid, a chinese medicinal formula, *in vitro* and *in vivo*. Integr. Cancer Ther. 10: 58-69.
7. Knobel, P.A., et al. 2011. Inhibition of REV3 expression induces persistent DNA damage and growth arrest in cancer cells. Neoplasia 13: 961-970.
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