SANTA CRUZ BIOTECHNOLOGY, INC.

p16 (DCS50.2): sc-65224

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The progression of cells through the cell cycle is regulated by a family of protein kinases known as cyclin-dependent kinases (Cdks). The sequential activation of individual members of this family and their consequent phosphorylation of critical substrates promotes orderly progression through the cell cycle. The cyclins function as differentially expressed positive regulators of Cdks. Negative regulators of the cycle include the p53-inducible protein p21 (also designated WAF1 or Cip1), Kip1 p27 and p16. The complexes formed by Cdk4 and the D-type cyclins have been strongly implicated in the control of cell proliferation during the G_1 phase. It has recently been shown that p16 binds to Cdk4 and inhibits the catalytic activity of the Cdk4/cyclin D complex. Moreover, the gene encoding p16 exhibits a high frequency of homozygous deletions and point mutations in established human tumor cell lines.

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 cyclin G_1-dependent kinases. Cell 75: 805-816.
3. El-Deiry, W.S., et al. 1993. WAF1, a potential mediator of p53 tumor suppression. Cell 75: 817-825.
4. Hunter, T. 1993. Braking the cycle. Cell 75: 839-841.
5. Xiong, Y., et al. 1993. p21 is a universal inhibitor of cyclin kinases. Nature 366: 701-704.
6. Serrano, M., et al. 1993. A new regulatory motif in cell-cycle control causing specific inhibition of cyclin D/Cdk4. Nature 366: 704-707.
7. Polyak, K., et al. 1994. p27Kip1, a cyclin-Cdk inhibitor, links transforming growth factor-β and contact inhibition to cell cycle arrest. Genes Dev. 8: 9-22.
8. Kamb, A., et al. 1994. A cell cycle regulator potentially involved in genesis of many tumor types. Science 264: 436-440.

CHROMOSOMAL LOCATION

Genetic locus: CDKN2A (human) mapping to 9p21.3.

SOURCE

p16 (DCS50.2) is a mouse monoclonal antibody raised against recombinant full length p16 protein of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

APPLICATIONS

p16 (DCS50.2) is recommended for detection of p16 of 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 p16 siRNA (h): sc-36143, p16 shRNA Plasmid (h): sc-36143-SH and p16 shRNA (h) Lentiviral Particles: sc-36143-V.

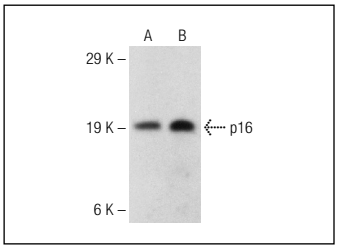
Molecular Weight of p16: 16 kDa.

Positive Controls: H69AR whole cell lysate, HeLa whole cell lysate: sc-2200 or Saos-2 cell lysate: sc-2235.

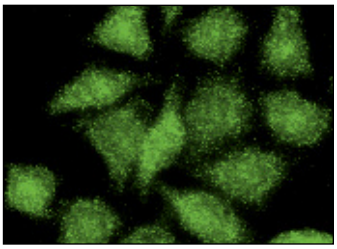
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



p16 (DCS50.2): sc-65224. Western blot analysis of p16 expression in HeLa (**A**) and H69AR (**B**) whole cell lysates.



p16 (DCS50.2): sc-65224. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization.

SELECT PRODUCT CITATIONS

1. Sasaki, M., et al. 2006. Decreased expression of Bmi-1 is closely associated with cellular senescence in small bile ducts in primary biliary cirrhosis. Am. J. Pathol. 169: 831-845.
2. Zeini, M., et al. 2006. Specific contribution of p19 ARF to nitric oxide-dependent apoptosis. J. Immunol. 177: 3327-3336.
3. Burnworth, B., et al. 2006. Gain of 11q/cyclin D1 overexpression is an essential early step in skin cancer development and causes abnormal tissue organization and differentiation. Oncogene 25: 4399–4412.
4. Wang, Y., et al. 2006. Total body irradiation selectively induces murine hematopoietic stem cell senescence. Blood 107: 358-366.