SANTA CRUZ BIOTECHNOLOGY, INC.

p16 INK4A (F-8): sc-373695

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 Waf1/Cip1 (also designated p21, WAF1 or Cip1), Kip1 p27 and p16 INK4A. 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 been shown that p16 INK4A binds to Cdk4 and inhibits the catalytic activity of the Cdk4/cyclin D complex. Moreover, the gene encoding p16 INK4A 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 G_1 cyclin-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.

CHROMOSOMAL LOCATION

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

SOURCE

p16 INK4A (F-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 4-31 at the N-terminus of p16 INK4A 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.

APPLICATIONS

p16 INK4A (F-8) is recommended for detection of p16 INK4A of human origin by Western Blotting (starting dilution 1:100, 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 INK4A siRNA (h): sc-36143, p16 INK4A shRNA Plasmid (h): sc-36143-SH and p16 INK4A shRNA (h) Lentiviral Particles: sc-36143-V.

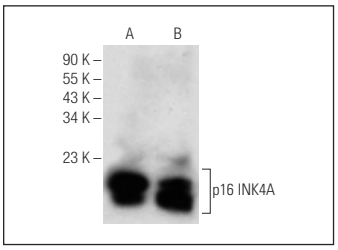
Molecular Weight of p16 INK4A: 16 kDa.

Positive Controls: Saos-2 cell lysate: sc-2235, HeLa whole cell lysate: sc-2200 or SHP-77 whole cell lysate: sc-364258.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



p16 INK4A (F-8): sc-373695. Western blot analysis of p16 INK4A expression in HeLa (**A**) and Saos-2 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Soria-Valles, C., et al. 2015. NFκB activation impairs somatic cell reprogramming in ageing. Nat. Cell Biol. 17: 1004-1013.
2. Gutiérrez-Fernández, A., et al. 2015. Loss of MT1-MMP causes cell senescence and nuclear defects which can be reversed by retinoic acid. EMBO J. 34: 1875-1888.
3. Murphy, B.G., et al. 2017. Evaluation of P16 expression in canine appendicular osteosarcoma. BMC Vet. Res. 13: 189.
4. Maylina, L., et al. 2022. Simultaneous analysis of the p16 gene and protein in canine lymphoma cells and their correlation with pRb phosphorylation. Vet. Sci. 9: 393.
5. Maylina, L., et al. 2023. Decreased sensitivity of cyclin-dependent kinase 4/6 inhibitors, palbociclib and abemaciclib to canine lymphoma cells with high p16 protein expression and low retinoblastoma protein phosphorylation. J. Vet. Med. Sci. 85: 99-104.
6. Yang, Y.T., et al. 2023. Establishment and characterization of cell lines from canine metastatic osteosarcoma. Cells 13: 25.

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.