SANTA CRUZ BIOTECHNOLOGY, INC.

p16 INK4A (F-12): sc-1661

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.

CHROMOSOMAL LOCATION

Genetic locus: CDKN2A (human) mapping to 9p21.3; Cdkn2a (mouse) mapping to 4 C4.

SOURCE

p16 INK4A (F-12) is a mouse monoclonal antibody raised against amino acids 1-168 representing full length p16 INK4A of mouse 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.

p16 INK4A (F-12) is available conjugated to agarose (sc-1661 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-1661 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-1661 PE), fluorescein (sc-1661 FITC), Alexa Fluor® 488 (sc-1661 AF488), Alexa Fluor® 546 (sc-1661 AF546), Alexa Fluor® 594 (sc-1661 AF594) or Alexa Fluor® 647 (sc-1661 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-1661 AF680) or Alexa Fluor® 790 (sc-1661 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

p16 INK4A (F-12) is recommended for detection of p16 INK4A 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), immunohistochemistry (including paraffin-embedded sections) (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 siRNA (m): sc-36144, p16 INK4A shRNA Plasmid (h): sc-36143-SH, p16 INK4A shRNA Plasmid (m): sc-36144-SH, p16 INK4A shRNA (h) Lentiviral Particles: sc-36143-V and p16 INK4A shRNA (m) Lentiviral Particles: sc-36144-V.

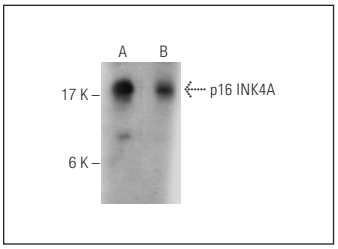
Molecular Weight of p16 INK4A: 16 kDa.

Positive Controls: SHP-77 whole cell lysate: sc-364258, SK-N-MC cell lysate: sc-2237 or HeLa whole cell lysate: sc-2200.

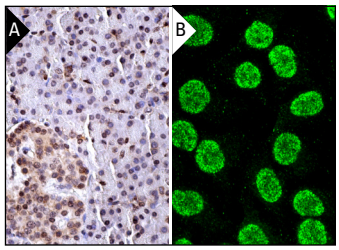
STORAGE

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

DATA



p16 INK4A (F-12): sc-1661. Western blot analysis of p16 INK4A expression in SHP-77 (**A**) and SK-N-MC (**B**) whole cell lysates.



p16 INK4A (F-12): sc-1661. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing nuclear and cytoplasmic staining of Islets of Langerhans and nuclear staining of a subset of glandular cells (**A**). Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**B**).

SELECT PRODUCT CITATIONS

1. Gorgoulis, V.G., et al. 1998. Alterations of the p16-pRb pathway and the chromosome locus 9p21-22 in non-small-cell lung carcinomas. Am. J. Pathol. 153: 1749-1765.
2. Neri, F., et al. 2015. TET1 is controlled by pluripotency-associated factors in ESCs and downmodulated by PRC2 in differentiated cells and tissues. Nucleic Acids Res. 43: 6814-6826.
3. Chen, J., et al. 2016. Soluble egg antigens of *Schistosoma japonicum* induce senescence in activated hepatic stellate cells by activation of the Stat3/p53/p21 pathway. Sci. Rep. 6: 30957.
4. Castex, J., et al. 2017. Inactivation of Lsd1 triggers senescence in trophoblast stem cells by induction of Sirt4. Cell Death Dis. 8: e2631.
5. Muramatsu, M., et al. 2018. SSeCKS/Akap12 suppresses metastatic melanoma lung colonization by attenuating Src-mediated pre-metastatic niche crosstalk. Oncotarget 9: 33515-33527.
6. Kumar, S., et al. 2019. Intestinal stem cells acquire premature senescence and senescence associated secretory phenotype concurrent with persistent DNA damage after heavy ion radiation in mice. Aging 11: 4145-4158.
7. Liu, X., et al. 2020. HPV-mediated down-regulation of NOD1 inhibits apoptosis in cervical cancer. Infect. Agent. Cancer 15: 6.
8. Fu, S., et al. 2021. Primary cilia as a biomarker in mesenchymal stem cells senescence: influencing osteoblastic differentiation potency associated with hedgehog signaling regulation. Stem Cells Int. 2021: 8850114.

RESEARCH USE

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