SANTA CRUZ BIOTECHNOLOGY, INC.

p16 INK4A (1E12E10): sc-81156

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.

CHROMOSOMAL LOCATION

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

SOURCE

p16 INK4A (1E12E10) is a mouse monoclonal antibody raised against purified truncated recombinant p16 INK4A of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p16 INK4A (1E12E10) 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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.

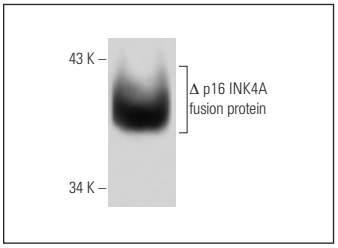
Molecular Weight of p16 INK4A: 16 kDa.

Positive Controls: WEHI-3 cell lysate: sc-3815, 3T3-L1 cell lysate: sc-2243 or MM-142 cell lysate: sc-2246.

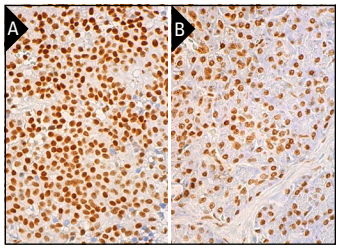
STORAGE

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

DATA



p16 INK4A (1E12E10): sc-81156. Western blot analysis of truncated human recombinant p16 INK4A fusion protein.



CDKN2A/p16INK4a (1E12E10): sc-81156. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pituitary gland tissue showing nuclear staining of cells in anterior pituitary lobe (**A**), and of human pancreas tissue showing nuclear staining of exocrine glandular cells (**B**). Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detected with m-IgGκ BP-B: sc-516142 and ImmunoCruz® ABC Kit: sc-516216.

SELECT PRODUCT CITATIONS

1. Blaise, S.A., et al. 2007. Influence of preconditioning-like hypoxia on the liver of developing methyl-deficient rats. Am. J. Physiol. Endocrinol. Metab. 293: E1492-E1502.
2. Zheng, S. and Pan, Y.X. 2011. Histone modifications, not DNA methylation, cause transcriptional repression of p16 (CDKN2A) in the mammary glands of offspring of protein-restricted rats. J. Nutr. Biochem. 22: 567-573.
3. Alonso-Castro, A.J., et al. 2013. Kaempferitrin induces apoptosis via intrinsic pathway in HeLa cells and exerts antitumor effects. J. Ethnopharmacol. 145: 476-489.
4. Zaharieva, M.M., et al. 2014. Reduced expression of the retinoblastoma protein shows that the related signaling pathway is essential for mediating the antineoplastic activity of erufosine. PLoS ONE 9: e100950.
5. Birch, J., et al. 2015. DNA damage response at telomeres contributes to lung aging and chronic obstructive pulmonary disease. Am. J. Physiol. Lung Cell. Mol. Physiol. 309: L1124-L1137.
6. Metin-Armagan, D., et al. 2020. A novel expression profile of cell cycle and DNA repair proteins in nonfunctioning pituitary adenomas. Endocr. Pathol. 31: 2-13.
7. Huang, J., et al. 2021. Detrimental effects of chronic L-arginine rich food on aging kidney. Front. Pharmacol. 11: 582155.
8. Huang, J., et al. 2021. Role of tubular epithelial arginase-II in renal inflammaging. NPJ Aging Mech. Dis. 7: 5.
9. Caretti, M., et al. 2024. Arginase-II gene deficiency reduces skeletal muscle aging in mice. Aging 16: 13563-13587.

RESEARCH USE

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