SANTA CRUZ BIOTECHNOLOGY, INC.

p16 INK4A (50.1): sc-9968

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 (50.1) is a mouse monoclonal antibody raised against full length 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 (50.1) is recommended for detection of p16 INK4A 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), 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 shRNA Plasmid (h): sc-36143-SH and p16 INK4A shRNA (h) Lentiviral Particles: sc-36143-V.

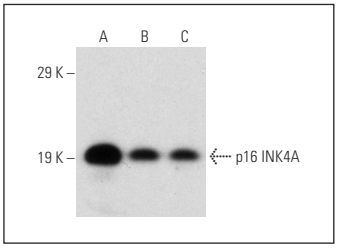
Molecular Weight of p16 INK4A: 16 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, H69AR whole cell lysate: sc-364382 or SHP-77 whole cell lysate: sc-364258.

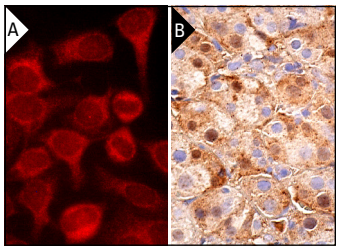
STORAGE

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

DATA



p16 INK4A (50.1): sc-9968. Western blot analysis of p16 INK4A expression in H69AR (**A**), ME-180 (**B**) and SHP-77 (**C**) whole cell lysates.



p16 INK4A (50.1): sc-9968. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic and nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Lubomierski, N., et al. 2001. Tumor suppressor genes in the 9p21 gene cluster are selective targets of inactivation in neuroendocrine gastroenteropancreatic tumors. Cancer Res. 61: 5905-5910.
2. Ling, Y., et al. 2011. Baicalein potently suppresses angiogenesis induced by vascular endothelial growth factor through the p53/Rb signaling pathway leading to G_1/S cell cycle arrest. Exp. Biol. Med. 236: 851-858.
3. Fei, J.W. and de Villiers, E.M. 2012. Differential regulation of cutaneous oncoprotein HPVE6 by wtp53, mutant p53R248W and ΔNp63α is HPV type dependent. PLoS ONE 7: e35540.
4. Gogolin, S., et al. 2013. CDK4 inhibition restores G_1-S arrest in MYCN-amplified neuroblastoma cells in the context of doxorubicin-induced DNA damage. Cell Cycle 12: 1091-1104.
5. Lawrenson, K., et al. 2014. Src as a novel therapeutic target for endometriosis. Gynecol. Oncol. 135: 100-107.
6. Sannigrahi, M.K., et al. 2016. Detection of active human papilloma virus-16 in head and neck cancers of Asian North Indian patients. Oral Dis. 22: 62-68.
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8. Daskalopoulos, A.G., et al. 2020. Assessment of TLR4 and TLR9 signaling and correlation with human papillomavirus status and histopathologic parameters in oral tongue squamous cell carcinoma. Oral Surg. Oral Med. Oral Pathol. Oral Radiol. 129: 493-513.
9. Jia, Y., et al. 2021. Th1 cytokine interferon gamma improves response in HER2 breast cancer by modulating the ubiquitin proteasomal pathway. Mol. Ther. 29: 1541-1556.

RESEARCH USE

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