SANTA CRUZ BIOTECHNOLOGY, INC.

# p16 INK4A (DCS-50): sc-65476

## 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. Xiong, Y., et al. 1993. p21 is a universal inhibitor of cyclin kinases. Nature 366: 701-704.


## CHROMOSOMAL LOCATION

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

## SOURCE

p16 INK4A (DCS-50) is a mouse monoclonal antibody raised against full length p16 INK4A of human origin.

## PRODUCT

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

## APPLICATIONS

p16 INK4A (DCS-50) 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.

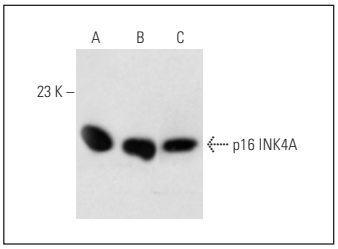
Molecular Weight of p16 INK4A: 16 kDa.

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

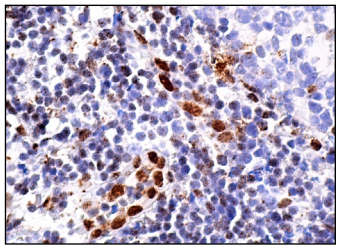
## STORAGE

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

## DATA




p16 INK4A (DCS-50): sc-65476. Western blot analysis of p16 INK4A expression in HeLa (**A**), Saos-2 (**B**) and SHP-77 (**C**) whole cell lysates.



p16 INK4A (DCS-50): sc-65476. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing nuclear staining of subset of cells in non-germinal center.

## SELECT PRODUCT CITATIONS


1. Tzai, T.S., et al. 2004. The prevalence and clinicopathologic correlate of p16 INK4A, retinoblastoma and p53 immunoreactivity in locally advanced urinary bladder cancer. Urol. Oncol. 22: 112-118.
2. Douville, J.M., et al. 2011. Mechanisms of MEOX1 and MEOX2 regulation of the cyclin dependent kinase inhibitors p21 and p16 in vascular endothelial cells. PLoS ONE 6: e29099.
3. Kryukov, F., et al. 2013. Cell cycle genes co-expression in multiple myeloma and plasma cell leukemia. Genomics 102: 243-249.
4. Lee, T., et al. 2014. Suppression of the DHX9 helicase induces premature senescence in human diploid fibroblasts in a p53-dependent manner. J. Biol. Chem. 289: 22798-22814.
5. Chang, S., et al. 2016. Hypoxic reprograming of H3K27me3 and H3K4me3 at the INK4A locus. FEBS Lett. 590: 3407-3415.
6. Liu, T., et al. 2018. Study on expression of p16 and human papillomavirus 16 and 18 (E6) in OLP and its malignant transformation. Pathol. Res. Pract. 214: 296-302.
7. Coulonval, K., et al. 2021. Monoclonal antibodies to activated CDK4: use to investigate normal and cancerous cell cycle regulation and involvement of phosphorylations of p21 and p27. Cell Cycle. E-published.


## RESEARCH USE

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

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.