SANTA CRUZ BIOTECHNOLOGY, INC.

p16 (JC8): sc-56330

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 (also designated WAF1 or Cip1), Kip1 p27 and p16. 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 binds to Cdk4 and inhibits the catalytic activity of the Cdk4/cyclin D complex. Moreover, the gene encoding p16 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.

SOURCE

p16 (JC8) is a mouse monoclonal antibody raised against full length recombinant p16 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p16 (JC8) is available conjugated to agarose (sc-56330 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-56330 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-56330 PE), fluorescein (sc-56330 FITC), Alexa Fluor® 488 (sc-56330 AF488), Alexa Fluor® 546 (sc-56330 AF546), Alexa Fluor® 594 (sc-56330 AF594) or Alexa Fluor® 647 (sc-56330 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-56330 AF680) or Alexa Fluor® 790 (sc-56330 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

p16 (JC8) is recommended for detection of p16 of human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:10-1:200) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for p16 siRNA (h): sc-36143, p16 shRNA Plasmid (h): sc-36143-SH and p16 shRNA (h) Lentiviral Particles: sc-36143-V.

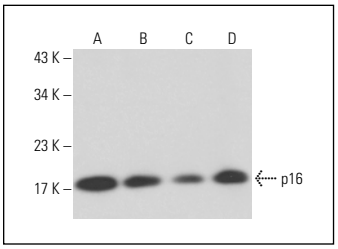
Molecular Weight of p16: 16 kDa.

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

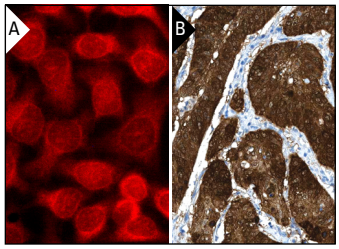
STORAGE

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

DATA



p16 (JC8): sc-56330. Western blot analysis of p16 expression in HeLa (**A**), Saos-2 (**B**), SHP-77 (**C**) and ME-180 (**D**) whole cell lysates.



p16 (JC8): sc-56330. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cervical cancer tissue showing nuclear and cytoplasmic staining of tumor cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Drayton, S., et al. 2003. Tumor suppressor $p16^{INK4a}$ determines sensitivity of human cells to transformation by cooperating cellular oncogenes. Cancer Cell 4: 301-310.
2. Moore, L.M., et al. 2009. IGFBP2 is a candidate biomarker for Ink4a-Arf status and a therapeutic target for high-grade gliomas. Proc. Natl. Acad. Sci. USA 106: 16675-16679.
3. Xue, Y., et al. 2010. HPV16 E2 is an immediate early marker of viral infection, preceding E7 expression in precursor structures of cervical carcinoma. Cancer Res. 70: 5316-5325.
4. Kreiling, J.A., et al. 2011. Age-associated increase in heterochromatic marks in murine and primate tissues. Aging Cell 10: 292-304.
5. Wild, P.J., et al. 2012. p53 suppresses type II endometrial carcinomas in mice and governs endometrial tumour aggressiveness in humans. EMBO Mol. Med. 4: 808-824.
6. Kaplon, J., et al. 2013. A key role for mitochondrial gatekeeper pyruvate dehydrogenase in oncogene-induced senescence. Nature 498: 109-112.
7. Sasai, N., et al. 2013. The transcriptional cofactor MCAF1/ATF7IP is involved in histone gene expression and cellular senescence. PLoS ONE 8: e68478.
8. Iannetti, A., et al. 2014. Regulation of p53 and Rb links the alternative NFκB pathway to EZH2 expression and cell senescence. PLoS Genet. 10: e1004642.
9. Lenain, C., et al. 2015. Autophagy-mediated degradation of nuclear envelope proteins during oncogene-induced senescence. Carcinogenesis 36: 1263-1274.

RESEARCH USE

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