SANTA CRUZ BIOTECHNOLOGY, INC.

p15 INK4B/p16 INK4A (C-7): sc-377412

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The normal progression of cells through the cell cycle is under the control of the cyclin-dependent protein kinases Cdk4 and Cdk6, which are subject to inhibition by the mitotic inhibitory protein 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. Expression of p15 INK4B (also designated, p15, INK4B, CDK4I, TP15, or MTS2), a member of the p16 INK4A family, is upregulated approximately 30-fold in TGFβ-treated human keratinocytes, suggesting that p15 INK4B may act as an effector of TGFβ-mediated cell cycle arrest. The gene encoding p15 INK4B (CDKN2B) has been mapped to chromosome 9p21.3, adjacent to the p16 INK4A gene, at a site of frequent chromosomal abnormality in human tumors. It has been suggested that p15 INK4B may function as an effector of TGFβ-mediated cell cycle arrest through inhibition of Cdk4 and Cdk6 kinases.

CHROMOSOMAL LOCATION

Genetic locus: CDKN2B/CDKN2A (human) mapping to 9p21.3; Cdkn2b/Cdkn2a (mouse) mapping to 4 C4.

SOURCE

p15 INK4B/p16 INK4A (C-7) is a mouse monoclonal antibody raised against amino acids 96-138 mapping at the C-terminus of p15 INK4B 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.

p15 INK4B/p16 INK4A (C-7) is available conjugated to agarose (sc-377412 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377412 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377412 PE), fluorescein (sc-377412 FITC), Alexa Fluor® 488 (sc-377412 AF488), Alexa Fluor® 546 (sc-377412 AF546), Alexa Fluor® 594 (sc-377412 AF594) or Alexa Fluor® 647 (sc-377412 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377412 AF680) or Alexa Fluor® 790 (sc-377412 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

p15 INK4B/p16 INK4A (C-7) is recommended for detection of p15 INK4B and p16 INK4A of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

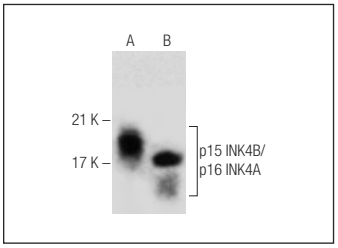
Molecular Weight of p15 INK4B/p16 INK4A: 16 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, 3T3-L1 cell lysate: sc-2243 or H69AR whole cell lysate: sc-364382.

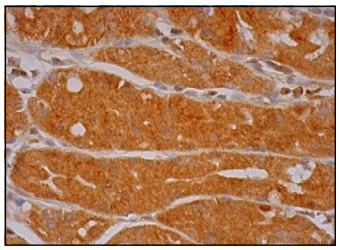
STORAGE

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

DATA



p15 INK4B/p16 INK4A (C-7): sc-377412. Western blot analysis of p15 INK4B/p16 INK4A expression in 3T3-L1 (**A**) and H69AR (**B**) whole cell lysates.



p15 INK4B/p16 INK4A (C-7): sc-377412. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lower stomach tissue showing cytoplasmic and nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Nagaraju, G.P., et al. 2013. Novel synthetic curcumin analogues EF31 and UBS109 are potent DNA hypomethylating agents in pancreatic cancer. Cancer Lett. 341: 195-203.
2. Sedic, M., et al. 2015. Haploinsufficiency for BRCA1 leads to cell-type-specific genomic instability and premature senescence. Nat. Commun. 6: 7505.
3. Jia, J., et al. 2016. Artemisinin inhibits gallbladder cancer cell lines through triggering cell cycle arrest and apoptosis. Mol. Med. Rep. 13: 4461-4468.
4. Wang, G.Y., et al. 2017. Differing tumor-suppressor functions of Arf and p53 in murine basal cell carcinoma initiation and progression. Oncogene 36: 3772-3780.
5. Jun, X., et al. 2018. PM2.5 promotes abdominal aortic aneurysm formation in Angiotensin II-infused apoE$^{-/-}$ mice. Biomed. Pharmacother. 104: 550-557.
6. Xu, W., et al. 2019. Effect of interventional embolotherapy on FHIT and p16 expression in hepatocellular carcinoma patients. Oncol. Lett. 17: 871-876.
7. Hu, Q., et al. 2020. Metformin as a senostatic drug enhances the anticancer efficacy of Cdk4/6 inhibitor in head and neck squamous cell carcinoma. Cell Death Dis. 11: 925.
8. Jin, W.N., et al. 2021. Neuroblast senescence in the aged brain augments natural kill cell cytotoxicity leading to impaired neurogenesis and cognition. Nat. Neurosci. 24: 61-73.
9. Lin, C.Y., et al. 2022. Therapeutic ultrasound halts progression of chronic kidney disease *in vivo* via the regulation of markers associated with renal epithelial-mesenchymal transition and senescence. Int. J. Mol. Sci. 23: 13387.

RESEARCH USE

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