SANTA CRUZ BIOTECHNOLOGY, INC.

p15/p16 (H-43): sc-28260

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. 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. Expression of p15, a member of the p16 family, is upregulated approximately 30-fold in TGFβ-treated human keratinocytes, suggesting that p15 may act as an effector of TGFβ-mediated cell cycle arrest. The gene encoding p15 has been mapped to chromosome 9p21.3, adjacent to the p16 gene, at a site of frequent chromosomal abnormality in human tumors. It has been suggested that p15 may function as an effector of TGFβ-mediated cell cycle arrest through inhibition of Cdk4 and Cdk6 kinases.

REFERENCES

1. Serrano, M., et al. 1993. A new regulatory motif in cell cycle control causing specific inhibition of cyclin D/Cdk4. Nature 366: 704-707.
2. Sherr, C.J. 1993. Mammalian G_1 cyclins. Cell 73: 1059-1065.
3. Hunter, T. 1993. Braking the cycle. Cell 75: 839-841.
4. Kamb, A., et al. 1994. A cell cycle regulator potentially involved in genesis of many tumor types. Science 264: 436-440.
5. Cairns, P., et al. 1994. Rates of $p16^{MTS1}$ mutations in primary tumors with 9p loss. Science 265: 415-417.
6. Hannon, G.J., et al. 1994. $p15^{INK4b}$ is a potential effector of TGF-induced cell cycle arrest. Nature 371: 257-261.
7. Hussussian, C.J., et al. 1994. Germline p16 mutations in familial melanoma. Nat. Genet. 8: 15.
8. Sherr, C.J. 1994. G_1 phase progression: cycling on cue. Cell 79: 551-555.
9. Hunter, T., et al. 1994. Cyclins and cancer II: cyclin D and Cdk inhibitors come of age. Cell 79: 573-582.

CHROMOSOMAL LOCATION

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

SOURCE

p15/p16 (H-43) is a rabbit polyclonal antibody raised against amino acids 96-138 mapping at the C-terminus of p15 of human origin.

PRODUCT

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

RESEARCH USE

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

APPLICATIONS

p15/p16 (H-43) is recommended for detection of p15 and p16 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p15/p16 (H-43) is also recommended for detection of p15 and p16 in additional species, including equine, canine, bovine and porcine.

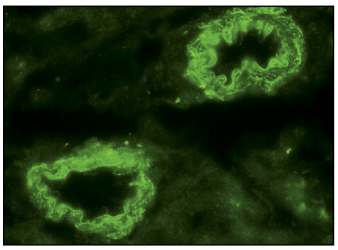
Molecular Weight of p15/p16: 15/16 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Saos-2 cell lysate: sc-2235 or 3T3-L1 cell lysate: sc-2243.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



p15/p16 (H-43): sc-28260. Immunofluorescence staining of normal mouse kidney frozen section showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Wu, C.W., et al. 2012. Pattern of cellular quiescence over the hibernation cycle in liver of thirteen-lined ground squirrels. Cell Cycle 11: 1714-1726.
2. Li, Z., et al. 2013. The polycomb group protein EZH2 is a novel therapeutic target in tongue cancer. Oncotarget 4: 2532-2549.
3. Yuan, D., et al. 2013. Long-term cadmium exposure leads to the enhancement of lymphocyte proliferation via down-regulating p16 by DNA hypermethylation. Mut. Res. 757: 125-131.

STORAGE

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