SANTA CRUZ BIOTECHNOLOGY, INC.

p19 (SPM429): sc-65594

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. Isolated members of the p16 family have been designated p15, p18 and p19. p15 expression is upregulated approximately 30-fold in TGFβ-treated human keratinocytes, suggesting that p15 may function as an effector of TGFβ-mediated cell cycle arrest through inhibition of Cdk4 and Cdk6 kinases. The gene encoding p15 has been mapped to chromosome 9p21.3 at a position adjacent to the p16 gene, at a site of frequent chromosomal abnormality in human tumors. Two p16-related proteins, p19 and p18, specifically inhibit the kinase activities of Cdk4 and Cdk6 but do not affect those of cyclin E-Cdk2, cyclin A-Cdk2 or cyclin B-Cdc2 complexes. p19 is expressed at maximal level during S phase, while overexpression of p19 leads to G_1 arrest.

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. Kamb, A., et al. 1994. A cell cycle regulator potentially involved in genesis of many tumor types. Science 264: 436-440.
3. Hannon, G.J., et al. 1994. $p15^{ink4B}$ is a potential effector of TGFβ-induced cell cycle arrest. Nature 371: 257-261.
4. Guan, K.L., et al. 1994. Growth suppression by p18, a $p16^{Ink4/MTS1}$ and $p14^{Ink4B/MTS2}$-related Cdk6 inhibitor, correlates with wildtype pRb function. Genes Dev. 8: 2939-2952.
5. Hussussian, C.J., et al. 1994. Germline p16 mutations in familial melanoma. Nat. Genet. 8: 15.
6. Cairns, P., et al. 1994. Rates of $p16^{MTS1}$ mutations in primary tumors with 9p loss. Science 265: 415-417.
7. Hirai, H., et al. 1995. Novel Ink4 proteins, p19 and p18, are specific inhibitors of the cyclin D-dependent kinases Cdk4 and Cdk6. Mol. Cell. Biol. 15: 2672-2681.

CHROMOSOMAL LOCATION

Genetic locus: CDKN2D (human) mapping to 19p13.2.

SOURCE

p19 (SPM429) is a mouse monoclonal antibody raised against full length p19 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.

STORAGE

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

APPLICATIONS

p19 (SPM429) is recommended for detection of p19 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for p19 siRNA (h): sc-36148, p19 shRNA Plasmid (h): sc-36148-SH and p19 shRNA (h) Lentiviral Particles: sc-36148-V.

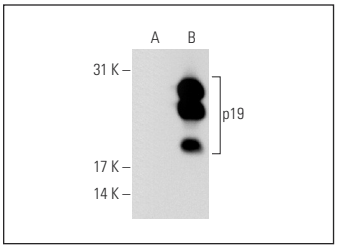
Molecular Weight of p19: 19 kDa.

Positive Controls: p19 (h2): 293T Lysate: sc-174520 or Jurkat whole cell lysate: sc-2204

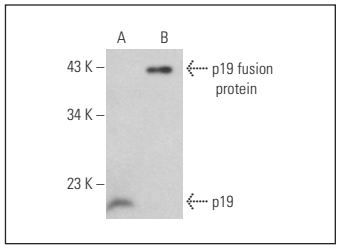
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



p19 (SPM429): sc-65594. Western blot analysis of p19 expression in non-transfected: sc-117752 (**A**) and human p19 transfected: sc-174520 (**B**) 293T whole cell lysates.



p19 (SPM429): sc-65594. Western blot analysis of p19 expression in Jurkat whole cell lysate (**A**) and mouse recombinant p19 fusion protein (**B**).

SELECT PRODUCT CITATIONS

1. Nande, R., et al. 2012. Targeting a newly established spontaneous feline fibrosarcoma cell line by gene transfer. PLoS ONE 7: e37743.
2. Wang, Z., et al. 2016. Protein 4.1N acts as a potential tumor suppressor linking PP1 to JNK-c-Jun pathway regulation in NSCLC. Oncotarget 7: 509-523.

RESEARCH USE

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