

p21 (SPM306): sc-65595

BACKGROUND

It is now well established that cyclins play a positive role in promoting cell cycle transitions via their ability to associate with and activate their cognate cyclin-dependent kinases (Cdks). Cdk2 associates with cyclins A, D and E, and has been implicated in the control of the G₁ to S phase transition in mammals. A novel Cdk-interacting protein, designated p21, Cip1 or WAF1, has been identified in cyclin A, cyclin D1, cyclin E and Cdk2 immunoprecipitates. p21 is a potent, tight-binding inhibitor of Cdks and can inhibit the phosphorylation of Rb by cyclin A-Cdk 2, cyclin E-Cdk2, cyclin D1-Cdk4 and cyclin D2-Cdk4 complexes. Expression of p21 is inducible by wildtype, but not mutant, p53. The mouse homolog of p21 is designated CAP20.

REFERENCES

- Sherr, C.J. 1993. Mammalian G₁ cyclins. *Cell* 73: 1059-1065.
- Harper, J.W., et al. 1993. The p21 Cdk-interacting protein Cip1 is a potent inhibitor of G₁ cyclin-dependent kinases. *Cell* 75: 805-816.
- El-Deiry, W.S., et al. 1993. WAF1, a potential mediator of p53 tumor suppression. *Cell* 75: 817-825.
- Hunter, T. 1993. Braking the cycle. *Cell* 75: 839-841.

CHROMOSOMAL LOCATION

Genetic locus: CDKN1A (human) mapping to 6p21.2.

SOURCE

p21 (SPM306) is a mouse monoclonal antibody raised against recombinant full length p21 protein of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} 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

p21 (SPM306) is recommended for detection of p21 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for p21 siRNA (h): sc-29427, p21 shRNA Plasmid (h): sc-29427-SH and p21 shRNA (h) Lentiviral Particles: sc-29427-V.

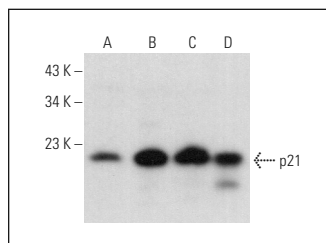
Molecular Weight of p21: 21 kDa.

Positive Controls: C32 nuclear extract: sc-2136, Raji whole cell lysate: sc-364236 or HUV-EC-C whole cell lysate: sc-364180.

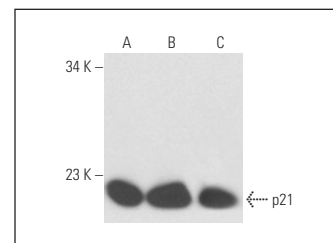
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



p21 (SPM306): sc-65595. Western blot analysis of p21 expression in Raji (A), HUV-EC-C (B), T-47D (C) and HCT-116 (D) whole cell lysates.



p21 (SPM306): sc-65595. Western blot analysis of p21 expression in C32 (A) and phorbol treated C32 (B) nuclear extracts and MDA-MB-231 (C) whole cell lysate.

SELECT PRODUCT CITATIONS

- Wang, Y., et al. 2014. Gemcitabine induces poly (ADP-ribose) polymerase-1 (PARP-1) degradation through autophagy in pancreatic cancer. *PLoS ONE* 9: e109076.
- Bauer, J., et al. 2015. Actin and TGFβ use diverging mitogenic signaling in advanced colon cancer. *Mol. Cancer* 14: 182.
- Wang, Y., et al. 2015. CGK733-induced LC3 II formation is positively associated with the expression of cyclin-dependent kinase inhibitor p21^{Waf1/Cip1} through modulation of the AMPK and PERK/CHOP signaling pathways. *Oncotarget* 6: 39692-39701.
- Fan, X., et al. 2019. Effect of Pim-3 downregulation on proliferation and apoptosis in lung adenocarcinoma A549 cells. *Ann. Clin. Lab. Sci.* 49: 770-776.

RESEARCH USE

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



See **p21 (F-5): sc-6246** for p21 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.