

# p21 Waf1/Cip1 (F-5): sc-6246

## 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 G<sub>1</sub> to S phase transition in mammals. A novel Cdk-interacting protein, designated p21 Waf1/Cip1, Cip1 or WAF1, has been identified in cyclin A, cyclin D1, cyclin E and Cdk2 immunoprecipitates. p21 Waf1/Cip1 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 Waf1/Cip1 is inducible by wildtype, but not mutant, p53. The mouse homolog of p21 Waf1/Cip1 is designated CAP20.

## REFERENCES

- Sherr, C.J. 1993. Mammalian G<sub>1</sub> cyclins. *Cell* 73: 1059-1065.
- Harper, J.W., et al. 1993. The p21 Cdk-interacting protein Cip1 is a potent inhibitor of G<sub>1</sub> 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; Cdkn1a (mouse) mapping to 17 A3.3.

## SOURCE

p21 Waf1/Cip1 (F-5) is a mouse monoclonal antibody raised against amino acids 1-159 representing full length p21 Waf1/Cip1 of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p21 Waf1/Cip1 (F-5) is available conjugated to agarose (sc-6246 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-6246 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-6246 PE), fluorescein (sc-6246 FITC), Alexa Fluor® 488 (sc-6246 AF488), Alexa Fluor® 546 (sc-6246 AF546), Alexa Fluor® 594 (sc-6246 AF594) or Alexa Fluor® 647 (sc-6246 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-6246 AF680) or Alexa Fluor® 790 (sc-6246 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, p21 Waf1/Cip1 (F-5) is available conjugated to biotin (sc-6246 B), 200 µg/ml, for WB, IHC(P) and ELISA; and to either TRITC (sc-6246 TRITC, 200 µg/ml) or Alexa Fluor® 405 (sc-6246 AF405, 200 µg/ml), for IF, IHC(P) and FCM.

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## STORAGE

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

## APPLICATIONS

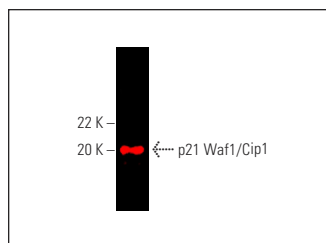
p21 Waf1/Cip1 (F-5) is recommended for detection of p21 Waf1/Cip1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10<sup>6</sup> cells).

Suitable for use as control antibody for p21 Waf1/Cip1 siRNA (h): sc-29427, p21 Waf1/Cip1 siRNA (m): sc-29428, p21 Waf1/Cip1 shRNA Plasmid (h): sc-29427-SH, p21 Waf1/Cip1 shRNA Plasmid (m): sc-29428-SH, p21 Waf1/Cip1 shRNA (h) Lentiviral Particles: sc-29427-V and p21 Waf1/Cip1 shRNA (m) Lentiviral Particles: sc-29428-V.

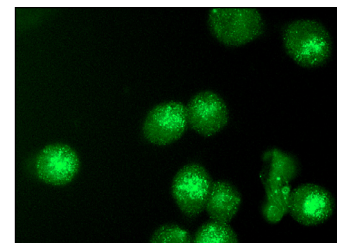
Molecular Weight of p21 Waf1/Cip1: 21 kDa.

Positive Controls: NIH/3T3 nuclear extract: sc-2138, KNRK nuclear extract: sc-2141 or C32 whole cell lysate: sc-2205.

## DATA



p21 Waf1/Cip1 (F-5) Alexa Fluor® 790: sc-6246 AF790. Direct near-infrared western blot analysis of p21 Waf1/Cip1 expression in NIH/3T3 nuclear extract. Blocked with UltraCruz® Blocking Reagent: sc-516214.



p21 Waf1/Cip1 (F-5): sc-6246. Immunofluorescence staining of methanol-fixed KNRK cells showing nuclear localization.

## SELECT PRODUCT CITATIONS

- Kamijo, T., et al. 1997. Tumor suppression at the mouse INK4a locus mediated by the alternative reading frame product p19 ARF. *Cell* 91: 649-659.
- He, D.M., et al. 2017. Oncogenic activity of amplified miniature chromosome maintenance 8 in human malignancies. *Oncogene* 36: 3629-3639.
- Zhu, X., et al. 2018. Synergistic effects of BET and MEK inhibitors promote regression of anaplastic thyroid tumors. *Oncotarget* 9: 35408-35421.
- Cai, W., et al. 2019. PBRM1 acts as a p53 lysine-acetylation reader to suppress renal tumor growth. *Nat. Commun.* 10: 5800.
- Cui, D., et al. 2020. DEPTOR is a direct p53 target that suppresses cell growth and chemosensitivity. *Cell Death Dis.* 11: 976.
- Wu, H.H., et al. 2021. Hsp70 acts as a fine-switch that controls E3 ligase CHIP-mediated TAp63 and ΔNp63 ubiquitination and degradation. *Nucleic Acids Res.* 49: 2740-2758.

## RESEARCH USE

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