

# p21 Waf1/Cip1 (AC8.3): sc-53393

## 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

1. Sherr, C.J. 1993. Mammalian G<sub>1</sub> cyclins. *Cell* 73: 1059-1065.
2. 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.
3. El-Deiry, W.S., et al. 1993. WAF1, a potential mediator of p53 tumor suppression. *Cell* 75: 817-825.
4. Hunter, T. 1993. Braking the cycle. *Cell* 75: 839-841.

## CHROMOSOMAL LOCATION

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

## SOURCE

p21 Waf1/Cip1 (AC8.3) is a mouse monoclonal antibody raised against p21 Waf1/Cip1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain 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

p21 Waf1/Cip1 (AC8.3) is recommended for detection of p21 Waf1/Cip1 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 Waf1/Cip1 siRNA (h): sc-29427, p21 Waf1/Cip1 shRNA Plasmid (h): sc-29427-SH and p21 Waf1/Cip1 shRNA (h) Lentiviral Particles: sc-29427-V.

Molecular Weight of p21 Waf1/Cip1: 21 kDa.

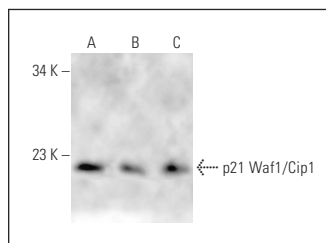
Positive Controls: C32 nuclear extract: sc-2136, C32 + PMA nuclear extract: sc-2137 or MCF7 nuclear extract: sc-2149.

## RECOMMENDED SUPPORT REAGENTS

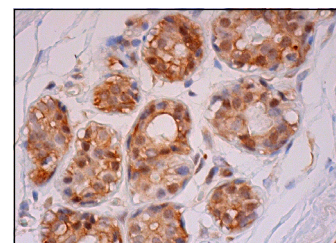
To ensure optimal results, the following support reagents are recommended:

- 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 Waf1/Cip1 (AC8.3): sc-53393. Western blot analysis of p21 Waf1/Cip1 expression in MCF7 (A), C32 (B) and phorbol-treated C32 (C) nuclear extracts.



p21 Waf1/Cip1 (AC8.3): sc-53393. Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing nuclear and cytoplasmic staining of glandular cells.

## SELECT PRODUCT CITATIONS

1. Xu, Z.W., et al. 2010. Targeting the Na<sup>+</sup>/K<sup>+</sup>-ATPase α1 subunit of hepatoma Hep G2 cell line to induce apoptosis and cell cycle arresting. *Biol. Pharm. Bull.* 33: 743-751.
2. Park, S.R., et al. 2012. Preferential cytotoxic effect of genistein on G361 melanoma cells via inhibition of the expression of focal adhesion kinase. *Int. J. Oral Biol.* 37: 189-195.
3. Liao, X.H., et al. 2017. Stat3 is required for miR-17-5p-mediated sensitization to chemotherapy-induced apoptosis in breast cancer cells. *Oncotarget* 8: 15763-15774.
4. Jiang, D., et al. 2019. p53-independent role of Myc mutant T58A in the proliferation and apoptosis of breast cancer cells. *Oncol. Lett.* 17: 1071-1079.

## STORAGE

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



See **p21 Waf1/Cip1 (F-5): sc-6246** for p21 Waf1/Cip1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.