

**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, 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-Cdk2, cyclin E-Cdk2, cyclin D1-Cdk4 and cyclin D2-Cdk4 complexes. Expression of CIP1, also designated WAF1, is inducible by wild-type, but not mutant, p53. The mouse homolog of p21 is designated CAP20.

**CHROMOSOMAL LOCATION**

Genetic locus: CDKN1A (human) mapping to 6p21.2; Cdkn1a (mouse) mapping to 17 A3.3.

**SOURCE**

p21 (M-19) is available as either rabbit (sc-471) or goat (sc-471-G) polyclonal affinity purified antibody raised against a peptide mapping at the C-terminus of p21 of mouse origin.

**PRODUCT**

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

Blocking peptide available for competition studies, sc-471 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

**APPLICATIONS**

p21 (M-19) is recommended for detection of p21 of mouse, rat and, to a lesser extent, 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).

p21 (M-19) is also recommended for detection of p21 in additional species, including canine, porcine and feline.

Suitable for use as control antibody for p21 siRNA (h): sc-29427, p21 siRNA (m): sc-29428, p21 siRNA (r): sc-108036, p21 shRNA Plasmid (h): sc-29427-SH, p21 shRNA Plasmid (m): sc-29428-SH, p21 shRNA Plasmid (r): sc-108036-SH, p21 shRNA (h) Lentiviral Particles: sc-29427-V, p21 shRNA (m) Lentiviral Particles: sc-29428-V and p21 shRNA (r) Lentiviral Particles: sc-108036-V.

Molecular Weight of p21: 21 kDa.

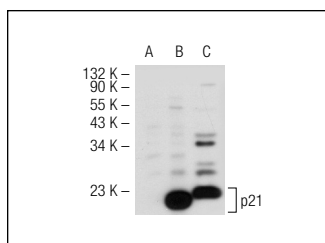
Positive Controls: NIH/3T3 nuclear extract: sc-2138, p21 (m): 293T Lysate: sc-122305 or KNRK nuclear extract: sc-2141.

**STORAGE**

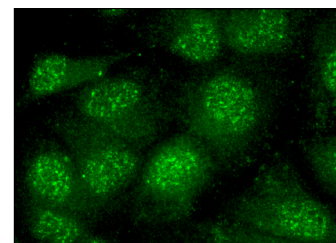
Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

**RESEARCH USE**

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

**DATA**

p21 (M-19): sc-471. Western blot analysis of p21 expression in non-transfected 293T: sc-117752 (A), mouse p21 transfected 293T: sc-122305 (B) and C32 (C) whole cell lysates.



p21 (M-19): sc-471. Immunofluorescence staining of methanol-fixed Hep G2 cells showing nuclear localization.

**SELECT PRODUCT CITATIONS**

- Kawasaki, H., et al. 1998. Distinct roles of the co-activators p300 and CBP in retinoic-acid-induced F9-cell differentiation. *Nature* 393: 284-289.
- Kominsky, S., et al. 1998. IFN-γ inhibition of cell growth in glioblastomas correlates with increased levels of the cyclin dependent kinase inhibitor p21 WAF1/CIP1. *Oncogene* 17: 2973-2979.
- de Keizer, P.L., et al. 2010. Activation of forkhead box O transcription factors by oncogenic BRAF promotes p21cip1-dependent senescence. *Cancer Res.* 70: 8526-8536.
- Siewit, C.L., et al. 2010. Cadmium promotes breast cancer cell proliferation by potentiating the interaction between ERα and c-Jun. *Mol. Endocrinol.* 24: 981-992.
- Kollmann, K., et al. 2011. c-JUN promotes Bcr-Abl-induced lymphoid leukemia by inhibiting methylation of the 5' region of Cdk6. *Blood* 117: 4065-4075.
- Vasey, D.B., et al. 2011. Spatial p21 expression profile in the mid-term mouse embryo. *Transgenic Res.* 20: 23-28.
- Lee, J.H. and Lu, H. 2011. 14-3-3γ inhibition of MDMX-mediated p21 turnover independent of p53. *J. Biol. Chem.* 286: 5136-5142.
- Chang, T., et al. 2011. Modification of Akt1 by methylglyoxal promotes the proliferation of vascular smooth muscle cells. *FASEB J.* 25: 1746-1757.
- Zhang, M., et al. 2012. A role for c-Abl in cell senescence and spontaneous immortalization. *Age.* 35: 1251-1262.


 MONOS  
Satisfation  
Guaranteed

Try **p21 (F-5): sc-6246** or **p21 (F-8): sc-271610**, our highly recommended monoclonal alternatives to p21 (M-19). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **p21 (F-5): sc-6246**.