

p-p21 (Thr 145)-R: sc-20220-R

BACKGROUND

The p53-inducible gene product, p21^{WAF1/CIP1}, plays a critical role in regulating the rate of tumor incidence. p21 is a kinase inhibitor that was originally identified as a cyclin-dependent kinase and PCNA-binding protein able to inhibit CDK catalytic activity and as a gene whose expression was induced by the tumor suppressor protein p53. p21 contributes to the regulation of cell division, mediation of negative growth signals, differentiation and senescence, modulation of the apoptotic response and activation of certain cyclin-CDKs in response to mitogenic signals. Serine 146 is a phosphorylation site within the carboxy terminal regulatory domain of p21 and when modified *in vivo* influences p21-PCNA interactions. Akt phosphorylates p21 at threonine 145 (Thr 145) which prevents p21 from forming a complex with PCNA, inhibiting DNA replication.

CHROMOSOMAL LOCATION

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

SOURCE

p-p21 (Thr 145)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Thr 145 phosphorylated p21 of human 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-20220 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-p21 (Thr 145)-R is recommended for detection of Thr 145 phosphorylated p21 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). p-p21 (Thr 145)-R is also recommended for detection of correspondingly phosphorylated p21 in additional species, including porcine, canine and avian.

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

Molecular Weight of p-p21: 21 kDa.

STORAGE

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

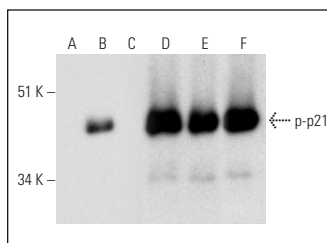
PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

RESEARCH USE

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

DATA



Western blot analysis of p21 phosphorylation in untreated (A,D), Akt1 treated (B,E) and Akt1 and lambda protein phosphatase (sc-200312A) treated (C,F) p21 fusion proteins. Antibodies tested include p-p21 (Thr 145)-R: sc-20220-R (A,B,C) and p21 (C-19): sc-397 (D,E,F).

SELECT PRODUCT CITATIONS

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- Qin, Q., et al. 2009. A novel function for p53: regulation of growth cone motility through interaction with Rho kinase. *J. Neurosci.* 29: 5183-5192.
- Watanabe, M., et al. 2010. Downregulation of CDKN1A in adult T cell leukemia/lymphoma despite overexpression of CDKN1A in human T-lymphotropic virus 1-infected cell lines. *J. Virol.* 84: 6966-6977.
- Koster, R., et al. 2010. Cytoplasmic p21 expression levels determine cisplatin resistance in human testicular cancer. *J. Clin. Invest.* 120: 3594-3605.
- Heeg, S., et al. 2011. EGFR overexpression induces activation of telomerase via PI3K/AKT-mediated phosphorylation and transcriptional regulation through Hif1-α in a cellular model of oral-esophageal carcinogenesis. *Cancer Sci.* 102: 351-360.
- Chang, T., et al. 2011. Modification of Akt1 by methylglyoxal promotes the proliferation of vascular smooth muscle cells. *FASEB J.* 25: 1746-1757.
- Wu, D.D., et al. 2011. Protein kinase B/Akt may regulate G₂/M transition in the fertilized mouse egg by changing the localization of p21^{Cip1/WAF1}. *Cell Biochem. Funct.* 29: 265-271.
- Kilic, U., et al. 2012. Evidence that membrane-bound G protein-coupled melatonin receptors MT1 and MT2 are not involved in the neuroprotective effects of melatonin in focal cerebral ischemia. *J. Pineal Res.* 52: 228-235.



Try **p-p21 (D-6): sc-377569**, our highly recommended monoclonal alternative to p-p21 (Thr 145).