SANTA CRUZ BIOTECHNOLOGY, INC.

p-p21 Waf1/Cip1 (D-6): sc-377569

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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_1 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.

CHROMOSOMAL LOCATION

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

SOURCE

p-p21 Waf1/Cip1 (D-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 140-149 Thr 145 of p21 Waf1/Cip1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-377569 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

p-p21 Waf1/Cip1 (D-6) is recommended for detection of Thr 145 phosphorylated p21 Waf1/Cip1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-p21 Waf1/Cip1 (D-6) is also recommended for detection of correspondingly phosphorylated p21 Waf1/Cip1 in additional species, including canine, porcine and avian.

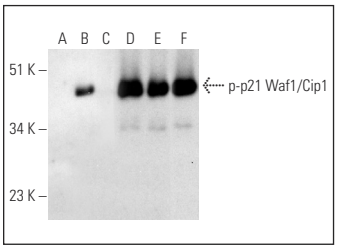
Suitable for use as control antibody for p21 Waf1/Cip1 siRNA (h): sc-29427, p21 Waf1/Cip1 siRNA (m): sc-29428, p21 Waf1/Cip1 shRNA Plasmid (h): sc-29427-SH, p21 Waf1/Cip1 shRNA Plasmid (m): sc-29428-SH, p21 Waf1/Cip1 shRNA (h) Lentiviral Particles: sc-29427-V and p21 Waf1/Cip1 shRNA (m) Lentiviral Particles: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

Molecular Weight of p-p21 Waf1/Cip1: 21 kDa.

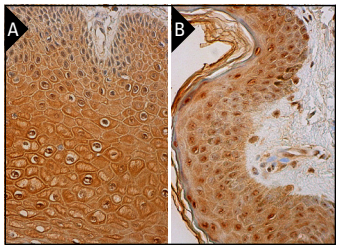
RECOMMENDED SUPPORT REAGENTS

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, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A 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



Western blot analysis of p21 Waf1/Cip1 phosphorylation in untreated (**A**,**D**), Akt1 treated (**B**,**E**) and Akt1 and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) p21 Waf1/Cip1 fusion proteins. Antibodies tested include p-p21 Waf1/Cip1 (D-6): sc-377569 (**A**,**B**,**C**) and p21 (C-19): sc-397 (**D**,**E**,**F**).



p-p21 Waf1/Cip1 (D-6): sc-377569. Immunoperoxidase staining of formalin fixed, paraffin-embedded human uterine cervix tissue showing nuclear and cytoplasmic staining of squamous epithelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing nuclear staining of Fibroblasts and nuclear and cytoplasmic staining of keratinocytes, Langerhans cells and melanocytes (**B**).

SELECT PRODUCT CITATIONS

1. Parida, P.K., et al. 2018. Inhibition of cancer progression by a novel *trans*-stilbene derivative through disruption of microtubule dynamics, driving G_2/M arrest, and p53-dependent apoptosis. Cell Death Dis. 9: 448.
2. Chen, Y., et al. 2019. Akt regulated phosphorylation of GSK-3β/cyclin D1, p21 and p27 contributes to cell proliferation through cell cycle progression from G_1 to S/G_2M phase in low-dose arsenite exposed HaCat cells. Front. Pharmacol. 10: 1176.
3. Shen, Y., et al. 2021. δ-catenin participates in EGF/AKT/p21^{Waf} signaling and induces prostate cancer cell proliferation and invasion. Int. J. Mol. Sci. 22: 5306.

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 for detailed protocols and support products.