SANTA CRUZ BIOTECHNOLOGY, INC.

p-p27 (Ser 10)-R: sc-12939-R

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

p27 associates with cyclin and cyclin-dependent kinase complexes to inhibit their kinase activity and contribute to the control of cell proliferation. p27 is phosphorylated on many sites, including threonine 187, *in vivo,* with the predominant phosphorylation site being serine 10. The extent of serine 10 phosphorylation by proline-directed kinase is markedly increased in cells in the G_0-G_1 phase of the cell cycle compared to cells in the S or M phase. p27 concentration is regulated predominantly by post-translational mechanisms. p27 is degraded by both the ubiquitin-proteasome pathway and ubiquitin-independent proteolysis. Regulation of ubiquitin-mediated proteolysis is often achieved through ubiquitination of the targeted phosphorylated protein, which renders it more susceptible to degradation.

CHROMOSOMAL LOCATION

Genetic locus: CDKN1B (human) mapping to 12p13.1; CDKN1B (mouse) mapping to 6 G1.

SOURCE

p-p27 (Ser 10)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 10 of p27 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12939 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-p27 (Ser 10)-R is recommended for detection of Ser 10 phosphorylated p27 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-p27 (Ser 10)-R is also recommended for detection of correspondingly phosphorylated Ser on p27 in additional species, including bovine and porcine.

Suitable for use as control antibody for p27 siRNA (h): sc-29429, p27 siRNA (m): sc-29430, p27 shRNA Plasmid (h): sc-29429-SH, p27 shRNA Plasmid (m): sc-29430-SH, p27 shRNA (h) Lentiviral Particles: sc-29429-V and p27 shRNA (m) Lentiviral Particles: sc-29430-V.

Molecular Weight of p-p27: 27 kDa.

Positive Controls: MM-142 cell lysate: sc-2246, KNRK whole cell lysate: sc-2214 or Jurkat whole cell lysate: sc-2204.

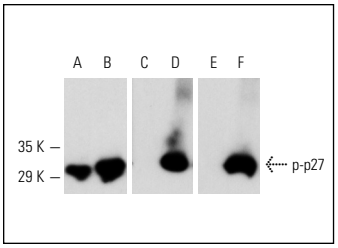
STORAGE

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



Western blot analysis of His-tagged mouse recombinant p27 (**A**,**C**,**E**) and His-tagged mouse recombinant p27 phosphorylated by rat recombinant ERK2 (**B**,**D**,**F**). Antibodies tested include: p27 (F-8): sc-1641 (**A**,**B**), p-p27 (Ser 10)-R: sc-12939-R (**C**,**D**) and p-p27 (Thr187)-R: sc-16324-R (**E**,**F**).

SELECT PRODUCT CITATIONS

1. Delmas, C., et al. 2003. MAP kinase-dependent degradation of $p27^{Kip1}$ by calpains in choroidal melanoma cells. Requirement of $p27^{Kip1}$ nuclear export. J. Biol. Chem. 278: 12443-12451.
2. Fujita, N., et al. 2003. Phosphorylation of p27Kip1 at threonine 198 by p90 ribosomal protein S6 kinases promotes its binding to 14-3-3 and cytoplasmic localization. J. Biol. Chem. 278: 49254-49260.
3. Liu, J., et al. 2004. Serine-threonine kinases and transcription factors active in signal transduction are detected at high levels of phosphorylation during mitosis in preimplantation embryos and trophoblast stem cells. Reproduction 128: 643-654.
4. Sarek, G., et al. 2005. KSHV viral cyclin inactivates $p27^{KIP1}$ through Ser 10 and Thr 187 phosphorylation in proliferating primary effusion lymphomas. Blood 107: 725-732.
5. Kase, S., et al. 2006. Phosphorylation of extracellular signal-regulated kinase and $p27^{Kip1}$ after retinal detachment. Graefes Arch. Clin. Exp. Ophthalmol. 244: 352-358.
6. Bockstaele, L., et al. 2006. Regulated activating Thr 172 phosphorylation of cyclin-dependent kinase 4(Cdk4): its relationship with cyclins and Cdk "inhibitors". Mol. Cell. Biol. 26: 5070-5085.
7. Koomoa, D.L., et al. 2008. Ornithine decarboxylase inhibition by α-difluoromethylornithine activates opposing signaling pathways via phosphorylation of both Akt/protein kinase B and p27Kip1 in neuroblastoma. Cancer Res. 68: 9825-2831.
8. Janumyan, Y., et al. 2008. G_0 function of BCL2 and BCL-x_L requires BAX, BAK, and p27 phosphorylation by Mirk, revealing a novel role of BAX and BAK in quiescence regulation. J. Biol. Chem. 283: 34108-34120.
9. Ranchal, I., et al. 2009. The reduction of cell death and proliferation by p27(Kip1) minimizes DNA damage in an experimental model of genotoxicity. Int. J. Cancer 125: 2270-2280.