SANTA CRUZ BIOTECHNOLOGY, INC.

p-p27 (Thr 187): sc-16324

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 posttranslational 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 (Thr 187) is available as either goat (sc-16324) or rabbit (sc-16324-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Thr 187 of p27 of human origin.

PRODUCT

Each vial contains either 100 µg (sc-16324) or 200 µg (sc-16324-R) IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16324 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-p27 (Thr 187) is recommended for detection of Thr 187 phosphorylated p27 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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-p27 (Thr 187) is also recommended for detection of correspondingly phosphorylated thr on p27 in additional species, including canine, bovine and avian.

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.

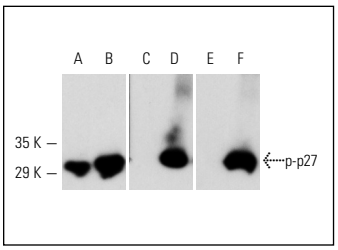
STORAGE

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

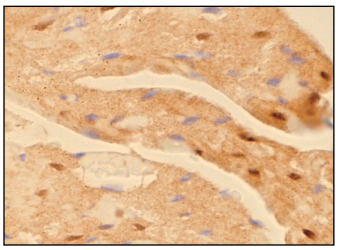
RESEARCH USE

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

DATA



Western blot analysis of mouse recombinant p27 (**A**,**C**,**E**) and 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**).



p-p27 (Thr 187)-R: sc-16324-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse skeletal muscle showing cytoskeletal localization.

SELECT PRODUCT CITATIONS

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3. Kelly-Spratt, K.S., et al. 2009. Inhibition of PI-3K restores nuclear p27Kip1 expression in a mouse model of Kras-driven lung cancer. Oncogene 28: 3652-3662.
4. Elphick, L.M., et al. 2009. A quantitative comparison of wild-type and gatekeeper mutant cdk2 for chemical genetic studies with ATP analogues. Chembiochem 10: 1519-1526.
5. Li, N., et al. 2009. Ca^{2+}/calmodulin-dependent protein kinase II promotes cell cycle progression by directly activating MEK1 and subsequently modulating p27 phosphorylation. J. Biol. Chem. 284: 3021-3027.
6. Liu, S., et al. 2009. p27-associated G_1 arrest induced by hinokitiol in human malignant melanoma cells is mediated via down-regulation of pRb, Skp2 ubiquitin ligase, and impairment of Cdk2 function. Cancer Lett. 286: 240-249.
7. Rodríguez-Ubreva, F.J., et al. 2010. Knockdown of protein tyrosine phosphatase SHP-1 inhibits G_1/S progression in prostate cancer cells through the regulation of components of the cell-cycle machinery. Oncogene 29: 345-355.
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9. Bustany, S., et al. 2011. Cyclin D1 regulates p27(Kip1) stability in B cells. Cell. Signal. 23: 171-179.
10. Chang, T., et al. 2011. Modification of Akt1 by methylglyoxal promotes the proliferation of vascular smooth muscle cells. FASEB J. 25: 1746-1757.