

p27 Kip1 (D-2): sc-393305

BACKGROUND

Cell cycle progression is regulated by a series of cyclin-dependent kinases consisting of catalytic subunits, designated Cdk, as well as activating subunits, designated cyclins. Orderly progression through the cell cycle requires the activation and inactivation of different cyclin-Cdk at appropriate times. A series of proteins has recently been described that function as "mitotic inhibitors". These include p21, the levels of which are elevated upon DNA damage in G₁ in a p53-dependent manner; p16; and a more recently described p16-related inhibitor designated p15. A p21-related protein, p27 Kip1, has been described as a negative regulator of G₁ progression and speculated to function as a possible mediator of TGFβ-induced G₁ arrest. p27 Kip1 interacts strongly with D-type cyclins and Cdk4 *in vitro* and, to a lesser extent, with cyclin E and Cdk2.

REFERENCES

- Sherr, C.J. 1993. Mammalian G₁ cyclins. *Cell* 73: 1059-1065.
- El-Deiry, W.S., et al. 1993. WAF1, a potential mediator of p53 tumor suppression. *Cell* 75: 817-825.
- Xiong, Y., et al. 1993. p21 is a universal inhibitor of cyclin kinases. *Nature* 366: 701-704.
- Serrano, M., et al. 1993. A new regulatory motif in cell cycle control causing specific inhibition of cyclin D/Cdk4. *Nature* 366: 704-707.
- Polyak, K., et al. 1994. p27 Kip1, a cyclin-Cdk inhibitor, links transforming growth factor β and contact inhibition to cell cycle arrest. *Genes Dev.* 8: 9-22.

CHROMOSOMAL LOCATION

Genetic locus: CDKN1B (human) mapping to 12p13.1; Cdkn1b (mouse) mapping to 6 G1.

SOURCE

p27 Kip1 (D-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 173-198 at the C-terminus of p27 Kip1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ 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-393305 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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.

APPLICATIONS

p27 Kip1 (D-2) is recommended for detection of p27 Kip1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p27 Kip1 (D-2) is also recommended for detection of p27 Kip1 in additional species, including canine and bovine.

Suitable for use as control antibody for p27 Kip1 siRNA (h): sc-29429, p27 Kip1 siRNA (m): sc-29430, p27 Kip1 shRNA Plasmid (h): sc-29429-SH, p27 Kip1 shRNA Plasmid (m): sc-29430-SH, p27 Kip1 shRNA (h) Lentiviral Particles: sc-29429-V and p27 Kip1 shRNA (m) Lentiviral Particles: sc-29430-V.

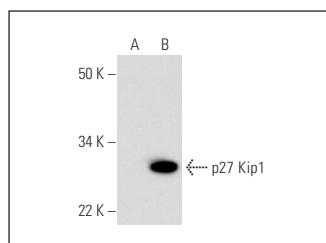
Molecular Weight of p27 Kip1: 27 kDa.

Positive Controls: p27 Kip1 (h): 293 Lysate: sc-110470.

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, UltraCruz® Blocking Reagent: sc-516214 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.

DATA



p27 Kip1 (D-2): sc-393305. Western blot analysis of p27 Kip1 expression in non-transfected: sc-110760 (A) and human p27 Kip1 transfected: sc-110470 (B) 293 whole cell lysates.

SELECT PRODUCT CITATIONS

- Hirata, T., et al. 2019. 4-methylthio-3-butenyl isothiocyanate (MTBITC) induced apoptotic cell death and G₂/M cell cycle arrest via ROS production in human esophageal epithelial cancer cells. *J. Toxicol. Sci.* 44: 73-81.



See **p27 Kip1 (F-8): sc-1641** for p27 Kip1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.