SANTA CRUZ BIOTECHNOLOGY, INC.

p57 (C-20): sc-1040

BACKGROUND

Cell cycle progression is regulated by a series of cyclin-dependent kinases that consist of catalytic subunits designated Cdks and activating subunits designated cyclins. Orderly progression through the cell cycle requires the activation and inactivation of different cyclin-Cdks at appropriate times. A series of proteins has been described that function as mitotic inhibitors. These include p21, the levels of which are elevated upon DNA damage in G_1 in a p53-dependent manner, p16 and p16-related inhibitors, designated p15, p18 and p19. A p21-related protein, p27, has been described as a negative regulator of G_1 progression and has been speculated to function as a possible mediator of TGF β-induced G_1 arrest. A member of the p21/p27 family of mitotic inhibitory proteins has been designated p57. p57 is a potent, tight-binding cyclin-dependent inhibitor of several G_1 cyclin/Cdk complexes. Overexpression of p57 arrests cells in G_1. Unlike p21, p57 is not regulated by p53.

CHROMOSOMAL LOCATION

Genetic locus: CDKN1C (human) mapping to 11p15.4.

SOURCE

p57 (C-20) is available as either rabbit (sc-1040) or goat (sc-1040-G) polyclonal affinity purified antibody raised against a peptide mapping at the C-terminus of p57 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-1040 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p57 (C-20) is recommended for detection of p57 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for p57 siRNA (h): sc-35751, p57 shRNA Plasmid (h): sc-35751-SH and p57 shRNA (h) Lentiviral Particles: sc-35751-V.

Molecular Weight of p57: 57 kDa.

Positive Controls: A673 nuclear extract: sc-2128, Jurkat nuclear extract: sc-2132 or HeLa nuclear extract: sc-2120.

RESEARCH USE

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

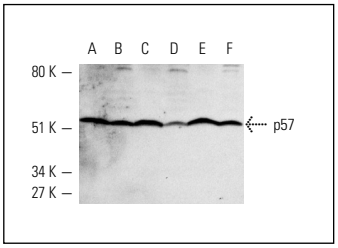
PROTOCOLS

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

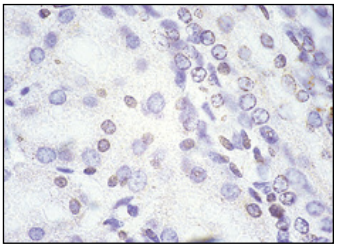
STORAGE

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

DATA



p57 (C-20)-G: sc-1040-G. Western blot analysis of p57 expression in A-673 (**A,B**), Jurkat (**C,D**) and HeLa (**E,F**) whole cell lysates (**A,C,E**) and nuclear extracts (**B,D,F**).



p57 (C-20)-G: sc-1040-G. Immunoperoxidase staining of formalin-fixed, paraffin-embedded normal human fetal kidney showing nuclear staining.

SELECT PRODUCT CITATIONS

1. Jiang, W.G., et al. 1998. γ-Linolenic acid blocks cell cycle progression by regulating phosphorylation of $p27^{Kip1}$ and $p57^{Kip2}$ and their interactions with other cycle regulators in cancer cells. Int. J. Oncol. 13: 611-617.
3. Radu, M., et al. 2008. S10 phosphorylation of p27 mediates atRA induced growth arrest in ovarian carcinoma cell lines. J. Cell. Physiol. 217: 558-568.
4. Pan, M.R., et al. 2009. Sumoylation of Prox1 controls its ability to induce VEGFR3 expression and lymphatic phenotypes in endothelial cells. J. Cell Sci. 122: 3358-3364.
5. Jonckheere, N., et al. 2009. Tumour growth and resistance to gemcitabine of pancreatic cancer cells are decreased by AP-2α overexpression. Br. J. Cancer 101: 637-644.
6. Ma, Y., et al. 2010. CDKN1C negatively regulates RNA polymerase II C-terminal domain phosphorylation in an E2F1-dependent manner. J. Biol. Chem. 285: 9813-9822.
7. Chow, S.E., et al. 2011. Downregulation of $p57^{Kip2}$ promotes cell invasion via LIMK/cofilin pathway in human nasopharyngeal carcinoma cells. J. Cell. Biochem. 112: 3459-3468.
8. Tury, A., et al. 2011. The cyclin-dependent kinase inhibitor $p57^{Kip2}$ regulates cell cycle exit, differentiation, and migration of embryonic cerebral cortical precursors. Cereb. Cortex. 21: 1840-1856.
9. Xu, L., et al. 2012. Alterations in microRNA expression linked to microcystin-LR-induced tumorigenicity in human WRL-68 cells. Mutat. Res. 743: 75-82.