SANTA CRUZ BIOTECHNOLOGY, INC.

p57 (E-17): sc-1037

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

REFERENCES

1. Sherr, C.J. 1993. Mammalian G_1 cyclins. Cell 73: 1059-1065.
2. Xiong, Y., et al. 1993. p21 is a universal inhibitor of cyclin kinases. Nature 366: 701-704.
3. El-Deiry, W.S., et al. 1993. WAF1, a potential mediator of p53 tumor suppression. Cell 75: 817-825.

CHROMOSOMAL LOCATION

Genetic locus: Cdkn1c (mouse) mapping to 7 F5.

SOURCE

p57 (E-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of p57 of mouse 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-1037 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p57 (E-17) is recommended for detection of p57 of mouse and rat 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).

Suitable for use as control antibody for p57 siRNA (m): sc-37621, p57 shRNA Plasmid (m): sc-37621-SH and p57 shRNA (m) Lentiviral Particles: sc-37621-V.

Molecular Weight of p57: 57 kDa.

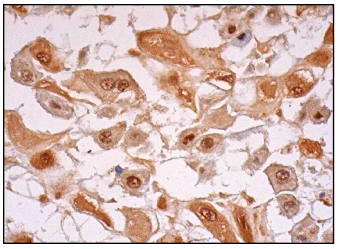
STORAGE

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



p57 (E-17): sc-1037. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing nuclear and cytoplasmic staining of decidual cells.

SELECT PRODUCT CITATIONS

1. Reynoud, E., et al. 1999. $p57^{Kip2}$ stabilizes the MyoD protein by inhibiting cyclin E-Cdk2 kinase activity in growing myoblasts. Mol. Cell. Biol. 19: 7621-7629.
2. von Harsdorf, R., et al. 1999. E2F-1 overexpression in cardiomyocytes induces downregulation of $p21^{CIP1}$ and $p27^{KIP1}$ and release of active cyclin-dependent kinases in the presence of Insulin-like growth factor I. Circ. Res. 85: 128-136.
3. Albrecht, J.H., et al. 1999. Regulation of G_1 cyclin-dependent kinases in the liver: role of nuclear localization and p27 sequestration. Am. J. Physiol. 277: G1207-G1216.
4. Dyer, M.A., et al. 2001. The $p57^{Kip2}$ cyclin kinase inhibitor is expressed by a restricted set of amacrine cells in the rodent retina. J. Comp. Neurol. 429: 601-614.
5. Crescenzi, E., et al. 2003. Bcl-2 activates a programme of premature senescence in human carcinoma cells. Biochem. J. 375: 263-274.
6. Cam, H., et al. 2006. p53 family members in myogenic differentiation and rhabdomyosarcoma development. Cancer Cell 10: 281-293.
7. Ye, W., et al. 2007. DNAse I pre-treatment markedly enhances detection of nuclear cyclin-dependent kinase inhibitor $p57^{Kip2}$ and BrdU double immunostaining in embryonic rat brain. Histochem. Cell Biol. 127: 195-203.
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.