SANTA CRUZ BIOTECHNOLOGY, INC.

p53AIP1 (H-91): sc-22761

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

p53 is a tumor suppressor gene or anti-oncogene that has been shown to induce apoptosis by means of a direct signaling pathway. For example, when severe DNA damage or a mutation occurs, Ser 46 on p53 is phosphorylated, p53AIP1 (p53-regulated apoptosis-inducing protein 1) is expressed and apoptosis is induced . However, when Ser 46 is substituted, the expression of p53AIP1 is blocked and apoptosis is inhibited. Expression of p53AIP1 is strictly controlled by p53 under specific conditions and is inducible by p53. The expression of p53AIP1 causes apoptosis in some, but not all p53-mutated cancer cells. p53AIP1 is ectopically expressed within the mitochondria in a wide variety of tissue types, excluding the thymus. Overexpression of the p53AIP1 gene causes dissipation of mitochondrial membrane potential which further suggests a key role for p53AIP1 in the regulation of apoptosis.

REFERENCES

1. Lane, D.P. and Benchimol, S. 1990. p53: oncogene or anti-oncogene? Genes Dev. 4: 1-8.
2. Levine, A.J. 1997. p53, the cellular gatekeeper for growth and division. Cell 88: 323-331.
3. Giaccia, A.J. and Kastan, M.B. 1998. The complexity of p53 modulation: emerging patterns from divergent signals. Genes Dev. 12: 2973-2983.
4. Li, P.F., Dietz, R. and von Harsdorf, R. 1999. p53 regulates mitochondrial membrane potential through reactive oxygen species and induces cytochrome c-independent apoptosis blocked by Bcl-2. EMBO J. 18: 6027-6036.
5. Oda, K., Arakawa, H., Tanaka, T., Matsuda, K., Tanikawa, C., Mori, T., Nishimori, H., Tamai, K., Tokino, T., Nakamura, Y. and Taya, Y. 2000. p53AIP1, a potential mediator of p53-dependent apoptosis, and its regulation by Ser 46-phosphorylated p53. Cell 102: 849-862.
6. Matsuda, K., Yoshida, K., Taya, Y., Nakamura, K., Nakamura, Y. and Arakawa, H. 2002. p53AIP1 regulates the mitochondrial apoptotic pathway. Cancer Res. 62: 2883-2889.

CHROMOSOMAL LOCATION

Genetic locus: P53AIP1 (human) mapping to 11q24.

SOURCE

p53AIP1 (H-91) is a rabbit polyclonal antibody raised against amino acids 1-91 mapping at the N-terminus of p53AIP1 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.

STORAGE

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

APPLICATIONS

p53AIP1 (H-91) is recommended for detection of p53AIP1 of 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).

Suitable for use as control antibody for p53AIP1 siRNA (h): sc-37459, p53AIP1 shRNA Plasmid (h): sc-37459-SH and p53AIP1 shRNA (h) Lentiviral Particles: sc-37459-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Malaguarnera, R., Vella, V., Pandini, G, Sanfilippo, M., Pezzino, V., Vigneri, R. and Frasca, F. 2008. TAp73α increases p53 tumor suppressor activity in thyroid cancer cells via the inhibition of MDM2-mediated degradation. Mol. Cancer Res. 6: 64-77.

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.