SANTA CRUZ BIOTECHNOLOGY, INC.

p73 (5B429): sc-56191

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The p53 gene is a widely studied anti-oncogene, or tumor suppressor gene. The p53 gene product can act as a negative regulator of cell growth in response to DNA damage. Mutations and allelic loss of the p53 gene have been associated with malignant transformation in a wide variety of human tumors. p53 shares considerable sequence similarity with p73, a gene that maps to a region in chromosome 1 that is frequently deleted in neuroblastomas. However, p73 does not appear to be activated by DNA damaging agents. The p73 isoform p73α inhibits drug-induced apoptosis in small cell lung carcinoma cells, while the p73 isoform p73β promotes it. p73α also prevents Bax activation, mitochondrial dysfunction, caspase activation and is able to reduce apoptosis induced by the BH3-only protein PUMA (p53 up-regulated modulator of apoptosis). There is an equilibrium between p73α and p73β, demonstrated by the fact that p73α inhibits the pro-apoptotic effect of p73β.

REFERENCES

1. Lane, D.P., et al. 1990. p53: oncogene or anti-oncogene? Genes Dev. 4: 1-8.
2. Malkin, D., et al. 1990. Germ line p53 mutations in a familial syndrome of breast cancer, sarcomas and other neoplasms. Science 250: 1233-1238.
3. Kastan, M.B., et al. 1992. A mammalian cell cycle checkpoint pathway utilizing p53 and GADD45 is defective in ataxia-telangiectasia. Cell 71: 587-597.
4. Jost, C.A., et al. 1997. p73 is a human p53-related protein that can induce apoptosis. Nature 389: 191-194.
5. Kaghad, M., et al. 1997. Monoallelically expressed gene related to p53 at 1p36, a region frequently deleted in neuroblastoma and other human cancers. Cell 90: 809-819.
6. Schmale, H., et al. 1997. A novel protein with strong homology to the tumor suppressor p53. Oncogene 15: 1363-1367.
7. Reichelt, M., et al. 1999. The yeast two-hybrid system reveals no interaction between p73α and SV40 large T-antigen. Arch. Virol. 144: 621-626.
8. Uramoto, H., et al. 2004. p73 competes with co-activators and recruits histone deacetylase to NF-Y in the repression of PDGF β-receptor. J. Cell Sci. 117: 5323-5331.
9. Nyman, U., et al. 2005. Full-length p73α cells. J. Biol. Chem. 280: 34159-34169.

CHROMOSOMAL LOCATION

Genetic locus: TP73 (human) mapping to 1p36.32; Trp73 (mouse) mapping to 4 E2.

SOURCE

p73 (5B429) is a mouse monoclonal antibody raised against full length p73 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p73 (5B429) is recommended for detection of p73 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for p73 siRNA (h): sc-36167, p73 siRNA (m): sc-36168, p73 shRNA Plasmid (h): sc-36167-SH, p73 shRNA Plasmid (m): sc-36168-SH, p73 shRNA (h) Lentiviral Particles: sc-36167-V and p73 shRNA (m) Lentiviral Particles: sc-36168-V.

Molecular Weight of p73: 73 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or A549 cell lysate: sc-2413.

SELECT PRODUCT CITATIONS

1. Beitzinger, M., et al. 2008. p73 poses a barrier to malignant transformation by limiting anchorage-independent growth. EMBO J. 27: 792-803.
2. Alonso, R., et al. 2009. Forodesine has high antitumor activity in chronic lymphocytic leukemia and activates p53-independent mitochondrial apoptosis by induction of p73 and BIM. Blood 114: 1563-1575.
3. Sasaki, Y., et al. 2009. p53 family members regulate the expression of the apolipoprotein D gene. J. Biol. Chem. 284: 872-883.
4. Veselska, R., et al. 2013. Intracellular distribution of the ΔNp73 protein isoform in medulloblastoma cells: a study with newly generated rabbit polyclonal antibodies. Histol. Histopathol. 28: 913-924.
5. Carastro, L.M., et al. 2014. Role of p73 dinucleotide polymorphism in prostate cancer and p73 protein isoform balance. Prostate Cancer 2014: 129582.
6. Koyama, R., et al. 2017. Identification and characterization of a metastatic suppressor BRMS1L as a target gene of p53. Cancer Sci. 108: 2413-2421.

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.

CONJUGATES

See **p73 (E-4): sc-17823** for p73 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.