SANTA CRUZ BIOTECHNOLOGY, INC.

p-p53 (Ser 33): sc-135632

BACKGROUND

p53 is a DNA-binding, oligomerization domain- and transcription activation domain-containing tumor suppressor that upregulates growth arrest and apoptosis-related genes in response to stress signals, thereby influencing programmed cell death, cell differentiation and cell cycle control mechanisms. p53 localizes to the nucleus yet can be chaperoned to the cytoplasm by the negative regulator MDM2, an E3 ubiquitin ligase that is upregulated in the presence of active p53, where MDM2 polyubiquitinates p53 for proteasome targeting. p53 can assemble into tetramers in the absence of DNA, fluctuates between latent and active (DNA-binding) conformations, and is differentially activated through posttranslational modifications including phosphorylation and acetylation. Mutations in the DNA-binding domain (DBD) (amino acids 110-286) of p53 can compromise energetically favorable association with *cis* elements and are implicated in several human cancers. In response to DNA damage, p53 is phosphorylated at various sites, including Ser 33, which results in transcription initiation.

REFERENCES

1. Levine, A.J. 1997. p53, the cellular gatekeeper for growth and division. Cell. 88: 323-331.
2. Ko, L.J., et al. 1997. p53 is phosphorylated by CDK7-cyclin H in a p36MAT1-dependent manner. Mol. Cell. Biol. 17: 7220-7229.
3. Sakaguchi, K., et al. 1998. DNA damage activates p53 through a phosphorylation-acetylation cascade. Genes Dev. 12: 2831-2841.
4. Jabbur, J.R., et al. 2000. DNA damage-induced phosphorylation of p53 at serine 20 correlates with p21 and Mdm-2 induction *in vivo*. Oncogene.19: 6203-6208.
5. Dumaz, N., et al. 2001. Critical roles for the serine 20, but not the serine 15, phosphorylation site and for the polyproline domain in regulating p53 turnover. Biochem. J. 359: 459-464.
6. Chene, P. 2001. The role of tetramerization in p53 function. Oncogene 20: 2611-2617.
7. Bean, L.J., et al. 2001. Regulation of the accumulation and function of p53 by phosphorylation of two residues within the domain that binds to Mdm2. J. Biol. Chem. 277: 1864-1871.
8. Xie, S., et al. 2001. Plk3 funcitonally links DNA damage to cell cycle arrest and apoptosis at least in part via the p53 pathway. J. Biol. Chem. 276: 43305-43312.

CHROMOSOMAL LOCATION

Genetic locus: TP53 (human) mapping to 17p13.1.

STORAGE

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

PROTOCOLS

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

SOURCE

p-p53 (Ser 33) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 33 of p53 of human origin.

PRODUCT

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

APPLICATIONS

p-p53 (Ser 33) is recommended for detection of Ser 33 phosphorylated p53 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

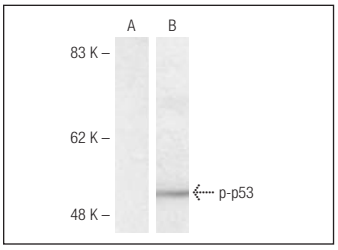
Suitable for use as control antibody for p53 siRNA (h): sc-29435, p53 shRNA Plasmid (h): sc-29435-SH and p53 shRNA (h) Lentiviral Particles: sc-29435-V.

Molecular Weight of p-p53: 53 kDa.

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 B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



p-p53 (Ser 33): sc-135632. Western blot analysis of phosphorylated p53 expression in untreated (**A**) and UV-treated (**B**) HT-29 cell extracts.

RESEARCH USE

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