SANTA CRUZ BIOTECHNOLOGY, INC.

p-p53 (hSer 20)-R: sc-18079-R

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

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 post-translational 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. Phosphorylation of p53 at residue Thr 155 is mediated by the COP9 signalosome (CSN) and targets p53 to ubiquitin-26S proteasome-dependent degradation.

CHROMOSOMAL LOCATION

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

SOURCE

p-p53 (hSer 20)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 20 phosphorylated p53 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-18079 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-p53 (hSer 20)-R is recommended for detection of Ser 20 phosphorylated p53 of human and monkey 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).

p-p53 (hSer 20)-R is also recommended for detection of correspondingly phosphorylated p53 in additional species, including equine, bovine and porcine.

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.

Positive Controls: COS whole cell lysate: sc-364228, COS + UV cell lysate: sc-24666 or A-431 whole cell lysate: sc-2201.

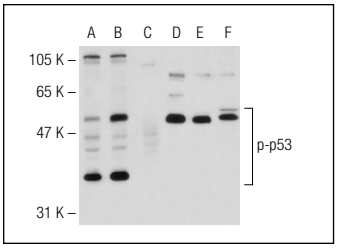
STORAGE

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



p-p53 (hSer 20)-R: sc-18079-R. Western blot analysis of p53 phosphorylation in un-treated (**A**,**D**), UV irradiated (**B**,**E**) and UV irradiated and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) COS whole cell lysates. Antibodies tested include p-p53 (hSer 20)-R: sc-18079-R (**A**,**B**,**C**) and p53 (Pab 240): sc-99 (**D**,**E**,**F**).

SELECT PRODUCT CITATIONS

1. Yoshida, K., et al. 2004. The destruction box of human geminin is critical for proliferation and tumor growth in human colon cancer cells. Oncogene 23: 58-70.
2. Oleinik, N.V., et al. 2005. Cancer cells activate p53 in response to 10-formyltetrahydrofolate dehydrogenase expression. Biochem. J. 391: 503-511.
3. Halaban, R., et al. 2009. Integrative analysis of epigenetic modulation in melanoma cell response to decitabine: clinical implications. PLoS ONE 4: e4563.
4. Giovannini, C., et al. 2009. Selective ablation of Notch3 in HCC enhances doxorubicin's death promoting effect by a p53 dependent mechanism. J. Hepatol. 50: 969-979.
5. Batsi, C., et al. 2009. Chronic NFκB activation delays RasV12-induced premature senescence of human fibroblasts by suppressing the DNA damage checkpoint response. Mech. Ageing Dev. 130: 409-419.
6. Wan, Z., et al. 2010. Human parvovirus B19 causes cell cycle arrest of human erythroid progenitors via deregulation of the E2F family of transcription factors. J. Clin. Invest. 120: 3530-3544.
7. Zhu, F., et al. 2010. Prostaglandin (PG)D(2) and 15-deoxy-δ(12,14)-PGJ(2), but not PGE(2), mediate shear-induced chondrocyte apoptosis via protein kinase A-dependent regulation of polo-like kinases. Cell Death Differ. 17: 1325-1334.
8. Luo, X.J., et al. 2011. Grifolin, a potent antitumour natural product upregulates death-associated protein kinase 1 DAPK1 via p53 in naso-pharyngeal carcinoma cells. Eur. J. Cancer 47: 316-325.
9. Unger, C., et al. 2013. The dichloromethane extract of the ethnomedicinal plant *Neurolaena lobata* inhibits NPM/ALK expression which is causal for anaplastic large cell lymphomagenesis. Int. J. Oncol. 42: 338-348.