SANTA CRUZ BIOTECHNOLOGY, INC.

p53 (DO-2): sc-53394

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

p53, a DNA-binding, oligomerization domain- and transcription activation domain-containing tumor suppressor, 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. MDM2 is an E3 ubiquitin ligase that is upregulated in the presence of active p53, where it poly-ubiquitinates p53 for proteasome targeting. p53 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) of p53, amino acids 110-286, can compromise energetically-favorable association with cis elements and are implicated in several human cancers.

CHROMOSOMAL LOCATION

Genetic locus: TP53 (human) mapping to 17p13.1; Trp53 (mouse) mapping to 11 B3.

SOURCE

p53 (DO-2) is a mouse monoclonal antibody raised against amino acids 10-16 of p53 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p53 (DO-2) is available conjugated to agarose (sc-53394 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53394 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53394 PE), fluorescein (sc-53394 FITC), Alexa Fluor® 488 (sc-53394 AF488), Alexa Fluor® 546 (sc-53394 AF546), Alexa Fluor® 594 (sc-53394 AF594) or Alexa Fluor® 647 (sc-53394 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53394 AF680) or Alexa Fluor® 790 (sc-53394 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

p53 (DO-2) is recommended for detection of p53 of mouse, rat and 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for p53 siRNA (h): sc-29435, p53 siRNA (m): sc-29436, p53 siRNA (r): sc-45917, p53 shRNA Plasmid (h): sc-29435-SH, p53 shRNA Plasmid (m): sc-29436-SH, p53 shRNA Plasmid (r): sc-45917-SH, p53 shRNA (h) Lentiviral Particles: sc-29435-V, p53 shRNA (m) Lentiviral Particles: sc-29436-V and p53 shRNA (r) Lentiviral Particles: sc-45917-V.

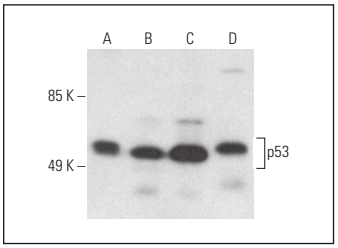
Molecular Weight of p53: 53 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, BT-20 cell lysate: sc-2223 or MDA-MB-231 cell lysate: sc-2232.

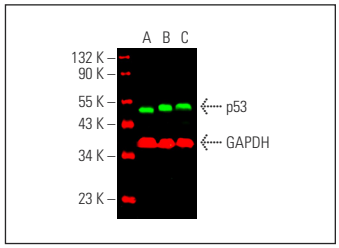
STORAGE

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

DATA



p53 (DO-2) HRP: sc-53394 HRP. Direct western blot analysis of p53 expression in A-431 (**A**), BT-20 (**B**), MDA-MB-231 (**C**) and T-47D (**D**) whole cell lysates.



Simultaneous direct near-infrared western blot analysis of p53 expression, detected with p53 (DO-2) Alexa Fluor® 680: sc-53394 AF680 and GAPDH expression, detected with GAPDH (G-9) Alexa Fluor® 790: sc-365062 AF790 in BT-20 (**A**), A-431 (**B**) and T-47D (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 790: sc-516731.

SELECT PRODUCT CITATIONS

1. Zaman, F., et al. 2007. Proteasome inhibition up-regulates p53 and apoptosis-inducing factor in chondrocytes causing severe growth retardation in mice. Cancer Res. 67: 10078-10086.
2. Moretti, R.M., et al. 2014. Gonadotropin-releasing hormone agonists sensitize, and resensitize, prostate cancer cells to docetaxel in a p53-dependent manner. PLoS ONE 9: e93713.
3. Huang, L., et al. 2017. Curcumol triggers apoptosis of p53 mutant triple-negative human breast cancer MDA-MB 231 cells via activation of p73 and PUMA. Oncol. Lett. 14: 1080-1088.
4. Chen, J.Y., et al. 2018. The ribosome biogenesis protein Esf1 is essential for pharyngeal cartilage formation in zebrafish. FEBS J. 285: 3464-3484.
5. Kang, L.J., et al. 2019. Stimulating DDX3 expression by serotonin 5-HT receptor 7 through phosphorylation of p53 via the AC-PKA-ERK signaling pathway. J. Cell. Biochem. 120: 18193-18208.
6. Kawata, Y., et al. 2020. Effect of murine double-minute 2 inhibitors in preclinical models of advanced clear cell carcinomas originating from ovaries and kidneys. Cancer Sci. 111: 3824-3834.
7. Kim, N.Y., et al. 2021. Temozolomide abrogates the aggressiveness of urothelial carcinoma cells by enhancing senescence and depleting the side population. Oncol. Lett. 22: 845.
8. Jiang, B., et al. 2022. Progerin modulates the IGF-1R/Akt signaling involved in aging. Sci. Adv. 8: eabo0322.

RESEARCH USE

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