SANTA CRUZ BIOTECHNOLOGY, INC.

p53 (DO-7): sc-47698

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.

SOURCE

p53 (DO-7) is a mouse monoclonal antibody epitope mapping between amino acids 1-45 of p53 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p53 (DO-7) is available conjugated to agarose (sc-47698 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-47698 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-47698 PE), fluorescein (sc-47698 FITC), Alexa Fluor® 488 (sc-47698 AF488), Alexa Fluor® 546 (sc-47698 AF546), Alexa Fluor® 594 (sc-47698 AF594) or Alexa Fluor® 647 (sc-47698 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-47698 AF680) or Alexa Fluor® 790 (sc-47698 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

p53 (DO-7) is recommended for detection of both wildtype and mutant p53 under denaturing and non-denaturing conditions 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells); non cross-reactive with p53 of mouse or rat origin.

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,

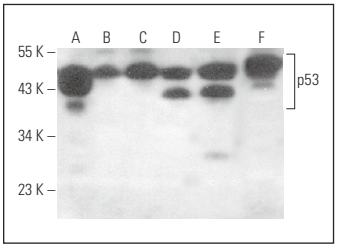
Molecular Weight of p53: 53 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, Jurkat whole cell lysate: sc-2204 or HUV-EC-C whole cell lysate: sc-364180.

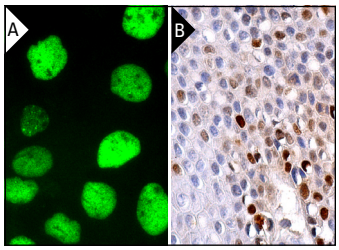
STORAGE

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

DATA



p53 (DO-7): sc-47698. Western blot analysis of p53 expression in A-431 (**A**), HCT-116 (**B**), Jurkat (**C**), SW480 (**D**), BT-20 (**E**) and HUV-EC-C (**F**) whole cell lysates.



p53 (DO-7): sc-47698. Immunofluorescence staining of formalin-fixed A-431 cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing nuclear staining of subset of epidermal cells (**B**).

SELECT PRODUCT CITATIONS

1. Sakaguchi, T., et al. 1998. Prognostic value of cyclin E and p53 expression in gastric carcinoma. Cancer 82: 1238-1243.
2. Magni, M., et al. 2014. Chk2 and REGγ-dependent DBC1 regulation in DNA damage induced apoptosis. Nucleic Acids Res. 42: 13150-13160.
3. Sklirou, A.D., et al. 2015. Hexapeptide-11 is a novel modulator of the proteostasis network in human diploid fibroblasts. Redox Biol. 5: 205-215.
4. Pires, A.S., et al. 2016. Ascorbic acid and colon cancer: an oxidative stimulus to cell death depending on cell profile. Eur. J. Cell Biol. 95: 208-218.
5. Liu, R., et al. 2017. Apigenin enhances the cisplatin cytotoxic effect through p53-modulated apoptosis. Oncol. Lett. 13: 1024-1030.
6. Tamiya, H., et al. 2018. SHARPIN-mediated regulation of protein arginine methyltransferase 5 controls melanoma growth. J. Clin. Invest. 128: 517-530.
7. Nasser, M.I., et al. 2019. Inhibitory effects of Schisandrin B on human prostate cancer cells. Oncol. Rep. 41: 677-685.
8. Blanden, A.R., et al. 2020. Zinc shapes the folding landscape of p53 and establishes a pathway for reactivating structurally diverse cancer mutants. Elife 9: e61487.
9. Han, S., et al. 2021. PURPL represses autophagic cell death to promote cutaneous melanoma by modulating ULK1 phosphorylation. Cell Death Dis. 12: 1070.
10. Siemund, A.L., et al. 2022. MLL-AF4 and a murinized pSer-variant thereof are turning on the nucleolar stress pathway. Cell Biosci. 12: 47.
11. Carrasco, N., et al. 2023. Antitumoral activity of *Leptocarpha rivularis* flower extracts against gastric cancer cells. Int. J. Mol. Sci. 24: 1439.

RESEARCH USE

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