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 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.

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,

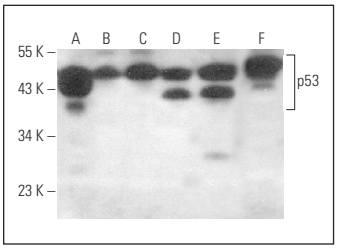
Molecular Weight of p53: 53 kDa.

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

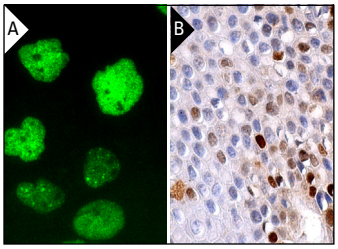
STORAGE

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. Sathyanarayanan, A., et al. 2016. microRNA-146a inhibits proliferation, migration and invasion of human cervical and colorectal cancer cells. Biochem. Biophys. Res. Commun. 480: 528-533.
3. Lu, H. and Wang, B. 2017. SIRT1 exerts neuroprotective effects by attenuating cerebral ischemia/reperfusion-induced injury via targeting p53/microRNA-22. Int. J. Mol. Med. 39: 208-216.
4. Guo, L., et al. 2018. Protective effect of dihydromyricetin revents fatty liver through nuclear factor-κB/p53/B-cell lymphoma 2-associated X protein signaling pathways in a rat model. Mol. Med. Rep. 19: 1638-1644.
5. Nasser, M.I., et al. 2019. Inhibitory effects of Schisandrin B on human prostate cancer cells. Oncol. Rep. 41: 677-685.
6. Yang, X., et al. 2020. Silencing of zinc finger protein 703 inhibits medullary thyroid carcinoma cell proliferation *in vitro* and *in vivo*. Oncol. Lett. 19: 943-951.
7. Han, S., et al. 2021. PURPL represses autophagic cell death to promote cutaneous melanoma by modulating ULK1 phosphorylation. Cell Death Dis. 12: 1070.
8. Fontan, C.T., et al. 2022. Human papillomavirus 16 E2 blocks cellular senescence in response to activation of the DNA damage response. Virology 575: 54-62.
9. Cardano, M., et al. 2023. Sex specific regulation of TSPY-like 2 in the DNA damage response of cancer cells. Cell Death Dis. 14: 197.

RESEARCH USE

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