

p53 (DO-1): sc-126



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.

REFERENCES

1. Banks, L., et al. 1986. Isolation of human-p53-specific monoclonal antibodies and their use in the studies of human p53 expression. *Eur. J. Biochem.* 159: 529-534.
2. Hupp, T.R., et al. 1992. Regulation of the specific DNA binding function of p53. *Cell* 71: 875-886.

CHROMOSOMAL LOCATION

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

SOURCE

p53 (DO-1) is a mouse monoclonal antibody epitope mapping between amino acid residues 11-25 at the N-terminus of p53 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-126 X, 200 µg/0.1 ml.

p53 (DO-1) is available conjugated to agarose (sc-126 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-126 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-126 PE), fluorescein (sc-126 FITC), Alexa Fluor® 488 (sc-126 AF488), Alexa Fluor® 546 (sc-126 AF546), Alexa Fluor® 594 (sc-126 AF594) or Alexa Fluor® 647 (sc-126 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-126 AF680) or Alexa Fluor® 790 (sc-126 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, p53 (DO-1) is available conjugated to biotin (sc-126 B), 200 µg/ml, for WB, IHC(P) and ELISA; and to either TRITC (sc-126 TRITC, 200 µg/ml) or Alexa Fluor® 405 (sc-126 AF405, 200 µg/ml), 100 tests in 2 ml, for IF, IHC(P) and FCM.

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STORAGE

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

APPLICATIONS

p53 (DO-1) is recommended for detection of wild type and mutant p53 under denaturing and non-denaturing conditions 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10⁶ cells).

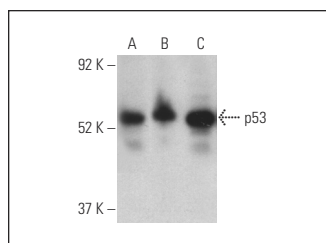
Suitable for use as control antibody for p53 siRNA (h): sc-29435, p53 siRNA (m): sc-29436, p53 shRNA Plasmid (h): sc-29435-SH, p53 shRNA Plasmid (m): sc-29436-SH, p53 shRNA (h) Lentiviral Particles: sc-29435-V and p53 shRNA (m) Lentiviral Particles: sc-29436-V.

p53 (DO-1) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

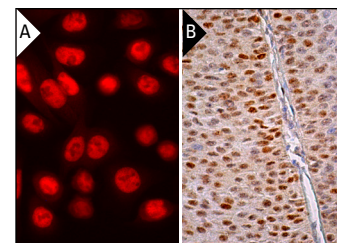
Molecular Weight of p53: 53 kDa.

Positive Controls: A549 cell lysate: sc-2413, Daudi cell lysate: sc-2415 or NTERA-2 cl.D1 whole cell lysate: sc-364181.

DATA



p53 (DO-1): sc-126. Western blot analysis of p53 expression in A549 (A), Daudi (B) and NTERA-2 cl.D1 (C) whole cell lysates. Detection reagent used: m-IgG_{2a} BP-HRP: sc-542731.



p53 (DO-1) Alexa Fluor® 594: sc-126 AF594. Direct immunofluorescence staining of formalin-fixed SW480 cells showing nuclear localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (A). p53 (DO-1): sc-126. Immunoperoxidase staining of formalin fixed, paraffin-embedded human high grade bladder transitional cell carcinoma tissue showing nuclear staining of tumor cells (B).

SELECT PRODUCT CITATIONS

1. Seow, W.K. and Perham, S. 1990. Enamel hypoplasia in prematurely-born children: a scanning electron microscopic study. *J. Pedod.* 14: 235-239.
2. Lei, H., et al. 2021. Targeting USP47 overcomes tyrosine kinase inhibitor resistance and eradicates leukemia stem/progenitor cells in chronic myelogenous leukemia. *Nat. Commun.* 12: 51.
3. Chen, M., et al. 2022. A p53-phosphoinositide signalosome regulates nuclear Akt activation. *Nat. Cell Biol.* 24: 1099-1113.
4. Li, Y., et al. 2023. HBx downregulated decorin and decorin-derived peptides inhibit the proliferation and tumorigenicity of hepatocellular carcinoma cells. *FASEB J.* 37: e22871.

RESEARCH USE

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