SANTA CRUZ BIOTECHNOLOGY, INC.

p53 (1-393): sc-4246

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 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) 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.
3. Levine, A.J. 1997. p53, the cellular gatekeeper for growth and division. Cell 88: 323-331.

CHROMOSOMAL LOCATION

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

SOURCE

p53 (1-393) is expressed in *E. coli* as an 80 kDa fusion protein corresponding to amino acids 1-393 representing full length p53 protein of human origin.

PRODUCT

Each vial contains in 50 µg of PBS with < 0.1% sodium azide and 0.1% gelatin.

RECONSTITUTION

In order to avoid freeze/thaw damaging of the active protein, dilute protein when first used to desired working concentration. Either a sterile filtered standard buffer (such as 50mM TRIS or 1X PBS) or water can be used for the dilution. Store any thawed aliquot in refrigeration at 2° C to 8° C for up to four weeks, and any frozen aliquot at -20° C to -80° C for up to one year. It is recommended that frozen aliquots be given an amount of standard cryopreservative (such as Ethylene Glycol or Glycerol 5-20% v/v), and refrigerated samples be given an amount of carrier protein (such as heat inactivated FBS or BSA to 0.1% v/v) or non-ionic detergent (such as Triton X-100 or Tween 20 to 0.005% v/v), to aid stability during storage.

STORAGE

Store desiccated at -20° C; stable for one year from the date of shipment.

APPLICATIONS

p53 (1-393) is provided as purified protein for use in protein binding studies and is suitable as a Western blotting positive control for sc-98, sc-99, sc-126, sc-263, sc-1311, sc-1314 and sc-6243.

Molecular Weight of p53: 53 kDa.

SELECT PRODUCT CITATIONS

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3. Rodríguez-Campos, A., et al. 2001. Mitogen-induced p53 downregulation precedes vascular smooth muscle cell migration from healthy tunica media and proliferation. Arterioscler. Thromb. Vasc. Biol. 21: 214-219.
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8. Fu, M., et al. 2003. Acetylation of androgen receptor enhances coactivator binding and promotes prostate cancer cell growth. Mol. Cell. Biol. 23: 8563-8575.
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11. McLure, K., et al. 2004. NAD^+ modulates p53 DNA binding specificity and function. Mol. Cell. Biol. 24: 9958-9967.
12. Rau Embry, M., et al. 2006. Lack of p53 induction in fish cells by model chemotherapeutics. Oncogene 25: 2004-2010.
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15. Kastelic, D., et al. 2009. A single-step procedure of recombinant library construction for the selection of efficiently produced llama VH binders directed against cancer markers. J. Immunol. Methods 350: 54-62.

RESEARCH USE

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