

p53 Rabbit monoclonal antibody

Catalog: MB66373

Host: Rabbit

Reactivity: Human

Background:

The p53 tumor suppressor protein plays a major role in cellular response to DNA damage and other genomic aberrations. Activation of p53 can lead to either cell cycle arrest and DNA repair or apoptosis. p53 is phosphorylated at multiple sites in vivo and by several different protein kinases in vitro. DNA damage induces phosphorylation of p53 at Ser15 and Ser20 and leads to a reduced interaction between p53 and its negative regulator, the oncoprotein MDM2. MDM2 inhibits p53 accumulation by targeting it for ubiquitination and proteasomal degradation. p53 can be phosphorylated by ATM, ATR, and DNA-PK at Ser15 and Ser37. Phosphorylation impairs the ability of MDM2 to bind p53, promoting both the accumulation and activation of p53 in response to DNA damage. Chk2 and Chk1 can phosphorylate p53 at Ser20, enhancing its tetramerization, stability, and activity. p53 is phosphorylated at Ser392 in vivo and by CAK in vitro. Phosphorylation of p53 at Ser392 is increased in human tumors and has been reported to influence the growth suppressor function, DNA binding, and transcriptional activation of p53. p53 is phosphorylated at Ser6 and Ser9 by CK1 δ and CK1 ϵ both in vitro and in vivo. Phosphorylation of p53 at Ser46 regulates the ability of p53 to induce apoptosis. Acetylation of p53 is mediated by p300 and CBP acetyltransferases. Inhibition of deacetylation suppressing MDM2 from recruiting HDAC1 complex by p19 (ARF) stabilizes p53. Acetylation appears to play a positive role in the accumulation of p53 protein in stress response. Following DNA damage, human p53 becomes acetylated at Lys382 (Lys379 in mouse) in vivo to enhance p53-DNA binding. Deacetylation of p53 occurs through interaction with the SIRT1 protein, a deacetylase that may be involved in cellular aging and the DNA damage response.

Product:

Liquid in 50mM Tris-Glycine (pH 7.4), 0.15M NaCl, 50% Glycerol, 0.01% Sodium azide and 0.05% BSA.

Molecular Weight:

~ 53 kDa

Swiss-Prot:

P04637

Purification&Purity:

The antibody was purified by immunogen affinity chromatography.

Applications:

WB (1/500 - 1/1000), IF/ICC (1/50 - 1/100)

Storage&Stability:

Store at 4 °C short term. Aliquot and store at -20 °C long term. Avoid freeze-thaw cycles.

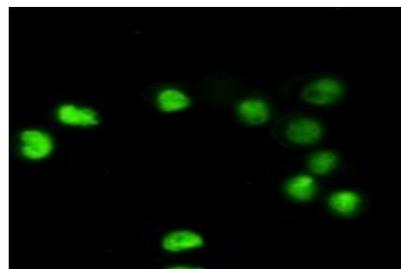
Specificity:

Recognizes endogenous levels of p53 protein.

DATA:



Western blot analysis of p53 expression in Jurkat (A) whole cell lysates.



Immunofluorescent analysis of p53 staining in MCF7 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3%

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PRODUCT DATA SHEET

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BSA-PBS and incubated overnight at 4 °C in a humidified chamber. Cells were washed with PBST and incubated with a AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark.

Note:

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

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