**p53 (1C12) Mouse mAb**

**Applications:** WB, IP, IF-IC, FC-FP, ChIP

**Reactivity:** H M R Hm Mk

**Sensitivity:** Endogenous

**MW (kDa):** 53

**Source/Isotype:** Mouse IgG1

**UniProt ID:** #P04637

**Entrez-Gene Id:** 7157

For Research Use Only. Not for Use in Diagnostic Procedures.

**Product Usage Information**

For optimal ChIP results, use 2.5 μl of antibody and 10 μg of chromatin (approximately 4 x 10^6 cells) per IP. This antibody has been validated using SimpleChIP<sup>®</sup> Enzymatic Chromatin IP Kits.

<table>
<thead>
<tr>
<th>Application</th>
<th>Dilution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Blotting</td>
<td>1:1000</td>
</tr>
<tr>
<td>Immunoprecipitation</td>
<td>1:500</td>
</tr>
<tr>
<td>Immunofluorescence (Immunocytochemistry)</td>
<td>1:2000</td>
</tr>
<tr>
<td>Flow Cytometry (Fixed/Permeabilized)</td>
<td>1:1600</td>
</tr>
<tr>
<td>Chromatin IP</td>
<td>1:200</td>
</tr>
</tbody>
</table>

**Storage**

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

**Specificity / Sensitivity**

p53 (1C12) Mouse mAb detects endogenous levels of total p53 protein.

**Species predicted to react based on 100% sequence homology:** Rabbit

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser20 of human p53.

**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 (1). p53 is phosphorylated at multiple sites in vivo and by several different protein kinases in vitro (2,3). 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 (4). MDM2 inhibits p53 accumulation by targeting it for ubiquitination and proteasomal degradation (5,6). 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 (4,7). Chk2 and Chk1 can phosphorylate p53 at Ser20, enhancing its tetramerization, stability, and activity (8,9). p53 is phosphorylated at Ser392 in vivo (10,11) and by CAK in vitro (11). Phosphorylation of p53 at Ser392 is increased in human tumors (12) and has been reported to influence the growth suppressor function, DNA binding, and transcriptional activation of p53 (10,13,14). p53 is phosphorylated at Ser6 and Ser9 by CK1δ and CK1ε both in vitro and in vivo (13,15). Phosphorylation of p53 at Ser46 regulates the ability of p53 to induce apoptosis (16). 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 (17). Following DNA damage, human p53 becomes acetylated at Lys382 (Lys379 in mouse) in vivo to enhance p53-DNA binding (18). Deacetylation of p53 occurs through interaction with the SIRT1 protein, a deacetylase that may be involved in cellular aging and the DNA damage response (19).

**Background References**


[https://www.cellsignal.com/datasheet.jsp?productId=2524&images=0&protocol=0](https://www.cellsignal.com/datasheet.jsp?productId=2524&images=0&protocol=0)
Species Reactivity
Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer
IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key
| WB: | Western Blotting |
| IP: | Immunoprecipitation |
| IF-IC: | Immunofluorescence (Immunocytochemistry) |
| FC-FP: | Flow Cytometry (Fixed/Permeabilized) |
| ChIP: | Chromatin IP |

Cross-Reactivity Key
- H: human
- M: mouse
- rat
- Hm: hamster
- Mk: monkey
- Mi: mink
- Vir: virus
- D. melanogaster
- Xenopus
- Zebrafish
- Bovine
- Dog
- Pig
- S. cerevisiae
- C. elegans
- Hr: horse
- GP: Guinea Pig
- Rab: rabbit
- All: all species expected

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