Acetyl-p53 (Lys382) Antibody

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 can be phosphorylated at multiple sites in vivo (10,11) and by several protein kinases, including Chk2, Chk1 and DNA-PK in vitro (11). Phosphorylation of p53 in vitro (10,11) increases its ability to induce apoptosis (16). Acetylation of p53 is mediated by p300 and CBP acetyltransferases. Inhibition of deacetylation suppressing MDM2 from recruiting HDAC1 is a major role in cellular response to DNA damage and other genomic aberrations.

Specificity/Sensitivity: Acetyl-p53 (Lys382) Antibody detects endogenous levels of p53 only when acetylated at lysine 382. This antibody does not cross-react with other acetylated proteins.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic acetylated peptide corresponding to residues surrounding Lys382 of human p53. Antibodies are purified by protein A and peptide affinity chromatography.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

Western blot analysis of extracts from HeLa cells, untreated, trichostatin A-treated (0.5 µM for 24 hours), doxorubicin-treated (0.5 µM for 24 hours), or both, using Acetyl-p53 (Lys382) Antibody (top) or p53 Antibody #2524 (bottom).

Recommended Antibody Dilutions: Western Blotting 1:1000

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

*Species cross-reactivity is determined by western blot.

**Anti-rabbit secondary antibodies must be used to detect this antibody.

For application specific protocols please see the web page for this product at www.cellsignal.com. Please visit www.cellsignal.com for a complete listing of recommended companion products.
Western blot analysis of extracts from HeLa cells, untreated or treated with both trichostatin A #9950 (400 nM for 24 hours), and doxorubicin (0.5 µM for 24 hours) using Acetyl-p53 (Lys382) Antibody alone (A), antibody preincubated with a non-acetylated Lys382 peptide (B), or antibody preincubated with an acetylated Lys382 peptide (C).

Background References: