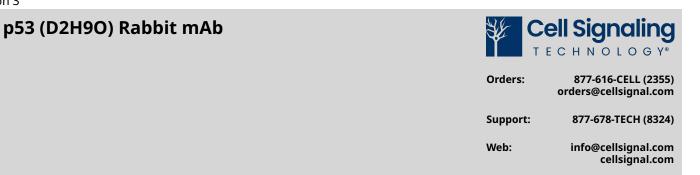
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532



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

Applications: W, IP, ChIP	<b>Reactivity:</b> M R	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 53	<b>Source/Isotype:</b> Rabbit IgG	<b>UniProt ID:</b> #P02340	Entrez-Gene Id: 22059	
Product Usage Information		For optimal ChIP results, use 10 μl of antibody and 10 μg of chromatin (approximately 4 x 10 <sup>6</sup> cells) per IP. This antibody has been validated using SimpleChIP <sup>®</sup> Enzymatic Chromatin IP Kits.					
		Application			Dilution		
		Western Blotting			1:1000		
		Immunoprecipitation	1		1:200		
		Chromatin IP			1:50		
Storage				ö), 150 mM NaCl, 100 μg ot aliquot the antibody.		ol and less than	
Specificity/Sensitivity		p53 (D2H9O) Rabbit mAb recognizes endogenous levels of total p53 protein.					
Source / Purification		Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ala350 of mouse p53 protein.					
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 <i>in vivo</i> and by several different protein kinases <i>in vitro</i> (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 <i>in vivo</i> (10,11) and by CAK <i>in vitro</i> (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 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) <i>in vivo</i> 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	<ol> <li>Levine, A.J. (1997) <i>Cell</i> 88, 323-31.</li> <li>Meek, D.W. (1994) <i>Semin Cancer Biol</i> 5, 203-10.</li> <li>Milczarek, G.J. et al. (1997) <i>Life Sci</i> 60, 1-11.</li> <li>Shieh, S.Y. et al. (1997) <i>Cell</i> 91, 325-34.</li> <li>Chehab, N.H. et al. (1999) <i>Proc Natl Acad Sci U S A</i> 96, 13777-82.</li> <li>Honda, R. et al. (1997) <i>FEBS Lett</i> 420, 25-7.</li> <li>Tibbetts, R.S. et al. (1999) <i>Genes Dev</i> 13, 152-7.</li> <li>Shieh, S.Y. et al. (1999) <i>EMBO J</i> 18, 1815-23.</li> <li>Hirao, A. et al. (2000) <i>Science</i> 287, 1824-7.</li> <li>Hao, M. et al. (1996) <i>J Biol Chem</i> 271, 29380-5.</li> <li>Lu, H. et al. (1997) <i>Mol Cell Biol</i> 17, 5923-34.</li> <li>Ullrich, S.J. et al. (1993) <i>Proc Natl Acad Sci U S A</i> 90, 5954-8.</li> <li>Kohn, K.W. (1999) <i>Mol Biol Cell</i> 10, 2703-34.</li> <li>Lohrum, M. and Scheidtmann, K.H. (1996) <i>Oncogene</i> 13, 2527-39.</li> <li>Knippschild, U. et al. (1997) <i>Oncogene</i> 15, 1727-36.</li> <li>Oda, K. et al. (2000) <i>Cell</i> 102, 849-62.</li> <li>T. Ito, A. et al. (2001) <i>EMBO J</i> 20, 1331-40.</li> <li>Sakaguchi, K. et al. (1998) <i>Genes Dev</i> 12, 2831-41.</li> <li>Solomon, J.M. et al. (2006) <i>Mol Cell Biol</i> 26, 28-38.</li> </ol>				
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	W: Western Blotting IP: Immunoprecipitation ChIP: Chromatin IP				
Cross-Reactivity Key	M: Mouse R: Rat				
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