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Modified p53 Specific Antibodies

Background

p53 protein was first described in 1979 and ten years later identified as a tumor suppressor protein. It is approximately 53 kDa and contains 393 amino acids that comprise several functional domains. It consists of an acidic N-terminus with a transactivation domain, a hydrophobic central DNA-binding core and a basic C-terminus with regulatory and oligomerisation domains. Upon sources of cellular stress such as damaged DNA, p53 protein is stabilized and activated via post-transcriptional mechanisms, and this leads to cell cycle arrest and DNA repair or apoptosis.

As just described, activation of p53-mediated transcription is a critical cellular response to DNA damage. p53 stability and site-specific DNA-binding activity and, therefore, transcriptional activity, are modulated by post-translational modifications including phosphorylation and acetylation. p53 is phosphorylated at several serine residues within its amino- and carboxy-terminal domains and is also acetylated at lysines within the carboxy-terminal portion of the molecule.

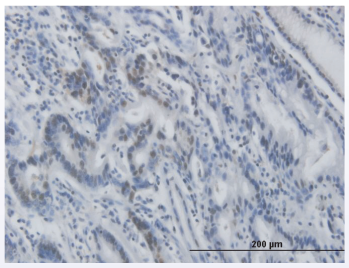
Reference :

1. Serpi, R., *et al.*, *Pharmacol. Toxicol.*, **92** (5), 242-245 (2003). [PMID : 12753412]
2. Brázdová, M., *et al.*, *Nucleic Acids Res.*, **30** (22), 4966-4974 (2002). [PMID : 12434001]
3. Shieh, S. Y., *et al.*, *Genes Dev.*, **14** (3), 289-300 (2000). [PMID : 10673501]
4. Sakaguchi, K., *et al.*, *Genes Dev.*, **12** (18), 2831-2841 (1998). [PMID : 9744860]

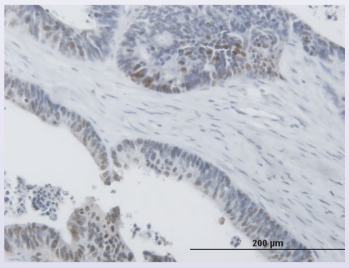
Products

Antibody	Clone	Cat. No.	Reactivity	Host	Isotype	Applications	Quantity	Storage
Phospho-p53 (Ser20)	17B6	71-113	Human	Mouse	$IgG_{1\kappa}$	ELISA, Western Blotting	50μg	-20°C
Phospho-p53 (Ser46)	#36	71-115	Human	Mouse	$IgG_{1\kappa}$	ELISA, Western Blotting	50μg	-20°C
Phospho-p53 (Ser315)	#18	71-117	Human	Mouse	$IgG_{2b\kappa}$	ELISA, Western Blotting	50μg	-20°C
Acetyl-p53 (Lys120)	10E5	71-131	Human	Mouse	$IgG_{1\kappa}$	ELISA, Western Blotting	50μg	-20°C
Acetyl-p53 (Lys382)	2B7E4	71-133	Human	Mouse	$IgG_{1\kappa}$	ELISA, Western Blotting	50μg	-20°C

Immunohistochemistry



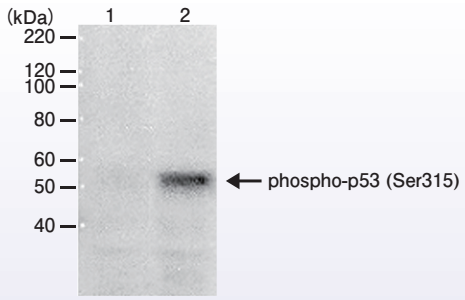
Cat. No. 71-115
anti-phospho-p53 (Ser46) antibody (clone #36)



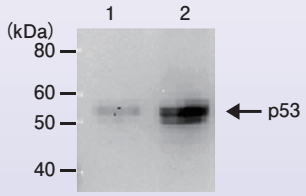
Cat. No. 71-117
anti-phospho-p53 (Ser315) antibody (clone #18)

Immunohistochemical staining of phosphorylated p53 proteins in formalin-fixed, paraffin-embedded human stomach tissue using anti-phoshpho-p53 (Ser46) antibody (upper panel) or anti-phoshpho-p53 (Ser315) antibody (lower panel). [in-house data]

Western Blotting



Cat. No. 71-117
anti-phospho-p53 (Ser315) antibody (clone #18)



anti-total p53 antibody (clone DO-1)

Western blot analysis of extracts from MCF-7 cells, untreated (lane 1) or treated (lane 2) with nocodazole (100 ng/ml, 48 hours) using anti-phospho-p53 (Ser315) antibody (upper panel) or anti-total p53 antibody (lower panel).

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Modified p53 Specific Antibodies

Description

Phospho-p53 (Ser20) Antibody (Cat. No. 71-113)

Application : ELISA, Western blotting (0.5～1 μg/ml)
Form : Purified monoclonal antibody ($IgG_{1\kappa}$) 1 mg/ml in PBS 50% glycerol, sterile-filtered

Reference :

1. Bode, A. M., *et al.*, "Post-translational modification of p53 in tumorigenesis.", *Nat. Rev. Cancer*, **4** (10), 793-805 (2004). [PMID : 15510160]
2. Shieh, S. Y., *et al.*, "DNA damage-inducible phosphorylation of p53 at N-terminal sites including a novel site, Ser20, requires tetramerization.", *EMBO J.*, **18** (7), 1815-1823 (1999). [PMID : 10202145]
3. Hirao, A., *et al.*, "DNA damage-induced activation of p53 by the checkpoint kinase Chk2.", *Science*, **287** (5759), 1824-1827 (2000). [PMID : 10710310]

Phospho-p53 (Ser46) Antibody (Cat. No. 71-115)

Application : ELISA, Western blotting (0.5～1 μg/ml)
Form : Purified monoclonal antibody ($IgG_{1\kappa}$) 1 mg/ml in PBS (pH 7.4) 50% glycerol

Reference :

1. Bode, A. M., *et al.*, "Post-translational modification of p53 in tumorigenesis.", *Nat. Rev. Cancer*, **4** (10), 793-805 (2004). [PMID : 15510160]
2. Oda, K., *et al.*, "p53AIP1, a potential mediator of p53-dependent apoptosis, and its regulation by Ser-46-phosphorylated p53.", *Cell*, **102** (6), 849-862 (2000). [PMID : 11030628]
3. Taira, N., *et al.*, "DYRK2 is targeted to the nucleus and controls p53 via Ser46 phosphorylation in the apoptotic response to DNA damage.", *Mol. Cell*, **25** (5), 725-738 (2007). [PMID : 17349958]

Phospho-p53 (Ser315) Antibody (Cat. No. 71-117)

Application : ELISA, Western blotting (～1 μg/ml)
Form : Purified monoclonal antibody ($IgG_{2b\kappa}$) 1 mg/ml in PBS (pH 7.4) 50% glycerol, sterile-filtered

Reference :

1. Katayama, H., *et al.*, "Phosphorylation by aurora kinase A induces Mdm2-mediated destabilization and inhibition of p53.", *Nature Genet.*, **36** (1), 55-62 (2004). [PMID : 14702041]
2. Blaydes, J. P., *et al.*, "Stoichiometric phosphorylation of human p53 at Ser315 stimulates p53-dependent transcription.", *J. Biol. Chem.*, **276** (7), 4699-4708 (2001). [PMID : 11078726]
3. Bode, A. M., *et al.*, "Post-translational modification of p53 in tumorigenesis.", *Nat. Rev. Cancer*, **4** (10), 793-805 (2004). [PMID : 15510160]

Acetyl-p53 (Lys120) Antibody (Cat. No. 71-131)

Application : ELISA, Western blotting (～1 μg/ml)
Form : Purified monoclonal antibody ($IgG_{1\kappa}$) 1 mg/ml in PBS (pH 7.4) 50% glycerol

Reference :

1. Tyteca, S., *et al.*, "To die or not to die : a HAT trick.", *Mol. Cell*, **24** (6), 807-808 (2006). [PMID : 17189182]
2. Tang, Y., *et al.*, "Tip60-dependent acetylation of p53 modulates the decision between cell-cycle arrest and apoptosis.", *Mol. Cell*, **24** (6), 827-839 (2006). [PMID : 17189186]
3. Sykes, S. M., *et al.*, "Acetylation of the p53 DNA-binding domain regulates apoptosis induction.", *Mol. Cell*, **24** (6), 841-851 (2006). [PMID : 17189187]

Acetyl-p53 (Lys382) Antibody (Cat. No. 71-133)

Application : ELISA, Western blotting (～1 μg/ml)
Form : Purified monoclonal antibody ($IgG_{1\kappa}$) 1 mg/ml in PBS (pH 7.4) 50% glycerol, sterile-filtered

Reference :

1. Bode, A. M., *et al.*, "Post-translational modification of p53 in tumorigenesis.", *Nat. Rev. Cancer*, **4** (10), 793-805 (2004). [PMID : 15510160]

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