Phospho-p53 Sampler Kit

E051034

Kits Includes	Cat.	Quantity	Application	Reactivity	Source
p53 (Ab-15) Antibody	E021085-1	50μg/50μl	IHC, WB, IF	Human	Rabbit
p53 (Ab-315) Antibody	E021091-1	50μg/50μl	WB	Human	Rabbit
p53 (Phospho-Ser15) Antibody	E011094-1	50μg/50μl	IHC, WB, IF	Human	Rabbit
p53 (Phospho-Ser315) Antibody	E011100-1	50μg/50μl	IHC, WB	Human	Rabbit
p53 (Phospho-Ser46) Antibody	E011099-1	50μg/50μl	WB	Human	Rabbit

TP53 gene encodes tumor protein p53, which responds to diverse cellular stresses to regulate target genes that induce cell cycle arrest, apoptosis, senescence, DNA repair, or changes in metabolism. p53 protein is expressed at low level in normal cells and at a high level in a variety of transformed cell lines, where it's believed to contribute to transformation and malignancy. p53 is a DNA-binding protein containing transcription activation, DNA-binding, and oligomerization domains. It is postulated to bind to a p53-binding site and activate expression of downstream genes that inhibit growth and/or invasion, and thus function as a tumor suppressor. Mutants of p53 that frequently occur in a number of different human cancers fail to bind the consensus DNA binding site, and hence cause the loss of tumor suppressor activity. Alterations of this gene occur not only as somatic mutations in human malignancies, but also as germline mutations in some cancer-prone families with Li-Fraumeni syndrome. Multiple p53 variants due to alternative promoters and multiple alternative splicing have been found. These variants encode distinct isoforms, which can regulate p53 transcriptional activity. Acts as a tumor suppressor in many tumor types; induces growth arrest or apoptosis depending on the physiological circumstances and cell type. Involved in cell cycle regulation as a trans-activator that acts to negatively regulate cell division by controlling a set of genes required for this process. One of the activated genes is an inhibitor of cyclin-dependent kinases. Apoptosis induction seems to be mediated either by stimulation of BAX and FAS antigen expression, or by repression of Bcl-2 expression. Implicated in Notch signaling cross-over.

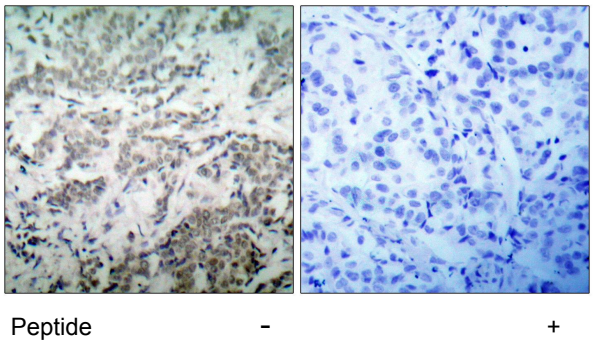
p53 (aka TP53) is a transcription factor whose protein levels and post-translational modification state alter in response to cellular stress (such as DNA damage, hypoxia, spindle damage). Activation of p53 begins through a number of mechanisms including phosphorylation by ATM, ATR, Chk1 and MAPKs. MDM2 is a ubiquitn ligase that binds p53 and targets p53 for proteasomal degradation. Phosphorylation, p14ARF and USP7 prevent MDM2-p53 interactions, leading to an increase in stable p53 tetramers in the cytoplasm. Further modifications such as methylation and acetylation lead to an increase in p53 binding to gene specific response elements. p53 regulates a large number of genes

(>100 genes) that control a number of key tumor suppressing functions such as cell cycle arrest, DNA repair, senescence and apoptosis. Whilst the activation of p53 often leads to apoptosis, p53 inactivation facilitates tumor progression. Post-translational modifications: Acetylated. Acetylation of Lys-382 by CREBBP enhances transcriptional activity. Deacetylation of Lys-382 by SIRT1 impairs its ability to induce proapoptotic program and modulate cell senescence. Phosphorylation on Ser residues mediates transcriptional activation. Phosphorylated by HIPK1 (By similarity). Phosphorylation at Ser-9 by HIPK4 increases repression activity on BIRC5 promoter. Phosphorylated on Thr-18 by VRK1, which may prevent the interaction with MDM2. Phosphorylated on Thr-55 by TAF1, which promotes MDM2-mediated degradation. Phosphorylated on Ser-46 by HIPK2 upon UV irradiation. Phosphorylation on Ser-46 is required for acetylation by CREBBP. Phosphorylated on Ser-392 following UV but not gamma irradiation. Phosphorylated upon DNA damage, probably by ATM or ATR. Phosphorylated on Ser-15 upon ultraviolet irradiation; which is enhanced by interaction with BANP. Dephosphorylated by PP2A. SV40 small T antigen inhibits the dephosphorylation by the AC form of PP2A. May be O-glycosylated in the C-terminal basic region. Studied in EB-1 cell line. Ubiquitinated by SYVN1, which leads to proteasomal degradation. Ubiquitinated by MKRN1 at Lys-291 and Lys-292, which leads to proteasomal degradation. Monomethylated at Lys-372 by SETD7, leading to stabilization and increased transcriptional activation. Monomethylated at Lys-370 by SMYD2, leading to decreased DNA-binding activity and subsequent transcriptional regulation activity. Lys-372 monomethylation prevents interaction with SMYD2 and subsequent monomethylation at Lys-370. Demethylation of di-methylated Lys-370 by KDM1/LSD1 prevents interaction with TP53BP1 and represses TP53-mediated transcriptional activation.

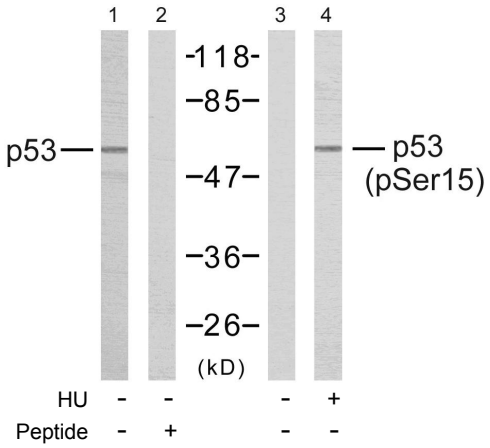
p53 (Ab-15) Antibody

E021085

Catalog Number: E021085-1, E021085-2
Amount: 50μg/50μl, 100μg/100μl
Form of Antibody: Rabbit IgG in phosphate buffered saline (without $Mg^{2+}$and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20℃/1 year
Immunogen: The antiserum was produced against synthesized non-phosphopeptide derived from human p53 around the phosphorylation site of serine15 (P-L-S^P-Q-E).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Specificity/Sensitivity: p53 (Ab-15) antibody detects endogenous levels of total p53 protein.
Reactivity: Human
Applications: WB:1:500~1000 IHC: 1:50~1:100 IF: 1:100-200
Swiss-Prot No. : P04637
References: Lin T, et al. (2005) Nat Cell Biol; 7(2): 165-71.
Vega FM, et al. (2004) Mol Cell Biol; 24(23): 10366-80.
Li J, et al. (2004) J Biol Chem; 279(40): 41275-9.
Wang J, et al. (2004) J Biol Chem; 279(38): 39584-92.



Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue using p53 antibody.

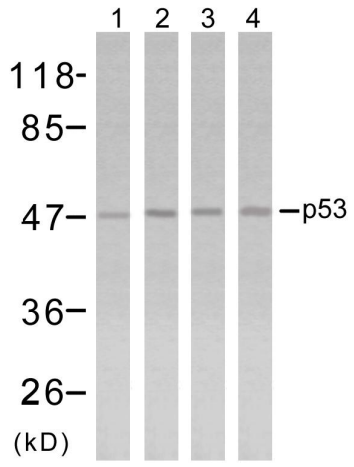


Western blot analysis of the extracts from HeLa cells untreated or treated with hydroxyurea using p53 antibody and p53 (phospho-Ser15) antibody.

p53 (Ab-315) Antibody

E021091

Catalog Number: E021091-1, E021091-2
Amount: 50μg/50μl, 100μg/100μl
Form of Antibody: Rabbit IgG in phosphate buffered saline (without $Mg^{2+}$and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20℃/1 year
Immunogen: The antiserum was produced against synthesized non-phosphopeptide derived from human p53 around the phosphorylation site of serine 315 (S-S-S^{P}-P-Q).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Specificity/Sensitivity: p53 (Ab-315) antibody detects endogenous levels of total p53 protein.
Reactivity: Human
Applications: WB: 1:500~1:1000
Swiss-Prot No. : P04637
References:
Lu, H. et al. (1997) Mol. Cell. Biol. 17, 5923-5934.
Lohrum, M. et.al. (1996) Oncogene 13, 2527-2539.
Pospísilová S, et al. (2004) Biochem J; 378(Pt 3): 939-47.
Merrick BA, et al. (2001) Biochemistry; 40(13): 4053-66.

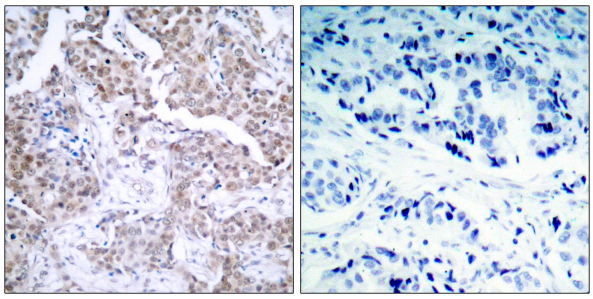


Western blot analysis using p53 antibody. Lane1: HT29 cells; Lane 2: MDA-MB-435 cells; Lane 3: K562 cells; Lane 4: COLO205 cells.

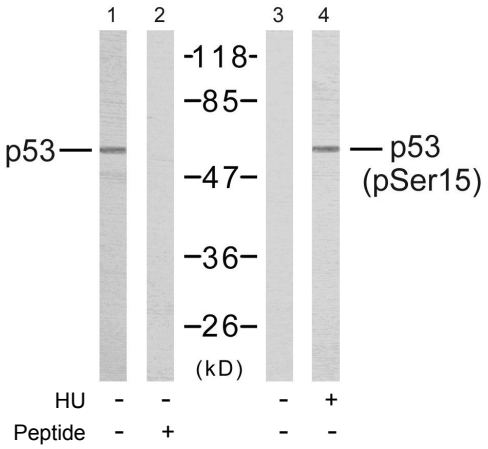
p53 (Phospho-Ser15) Antibody

E011094

Catalog Number: E011094-1, E011094-2
Amount: 50μg/50μl, 100μg/100μl
Form of Antibody: Rabbit IgG in phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20℃/1 year
Immunogen: The antiserum was produced against synthesized phosphopeptide derived from human p53 around the phosphorylation site of serine 15 (P-L-S^{P}-Q-E).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific phosphopeptide. The antibody against non-phosphopeptide was removed by chromatography using non-phosphopeptide corresponding to the phosphorylation site.
Specificity/Sensitivity: p53 (phospho-Ser15) antibody detects endogenous levels of p53 only when phosphorylated at serine15.
Reactivity: Human
Applications: WB: 1:500~1:1000 IHC: 1:50~1:100 IF: 1:100-200
Swiss-Prot No. : P04637
References:
Shieh, S. Y. et al. (1999) *EMBO J.* 18, 1815-1823.
Honda, R. et al. (1997) *FEBS Lett.* 420, 25-27.
Hirao, A. et al. (2000) *Science* 287, 1824-1827.



Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue using p53 antibody.

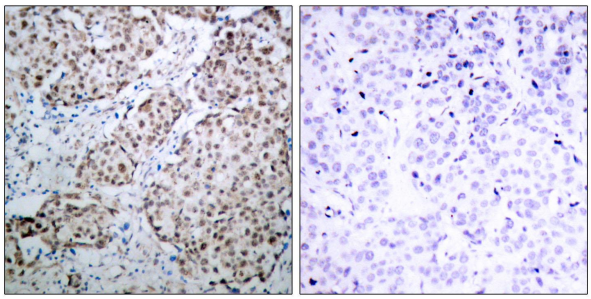


Western blot analysis of the extracts from HeLa cells untreated or treated with hydroxyurea, using p53 antibody and p53 antibody.

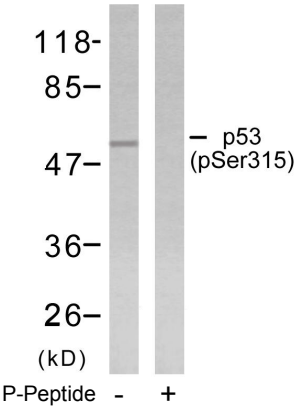
p53 (Phospho-Ser315) Antibody

E011100

Catalog Number: E011100-1, E011100-2
Amount: 50μg/50μl, 100μg/100μl
Form of Antibody: Rabbit IgG in phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20˚C/1 year
Immunogen: The antiserum was produced against synthesized phosphopeptide derived from human p53 around the phosphorylation site of serine 315 (S-S-S^{P}-P-Q).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific phosphopeptide. The antibody against non-phosphopeptide was removed by chromatogramphy using non-phosphopeptide corresponding to the phosphorylation site.
Specificity/Sensitivity: p53 (phospho-Ser315) antibody detects endogenous levels of p53 only when phosphorylated at serine 315.
Reactivity: Human
Applications: WB: 1:500~1:1000 IHC: 1:50~1:100
Swiss-Prot No. : P04637
References:
Lu, H. et al. (1997) Mol. Cell. Biol. 17, 5923-5934.
Lohrum, M. et.al. (1996) Oncogene 13, 2527-2539.
Ulrich, S. J. et al. (1993) Proc. Natl. Acad. Sci. USA 90, 5954-5958.
Pospísilová S, et al. (2004) Biochem J; 378(Pt 3): 939-47.
Merrick BA, et al. (2001) Biochemistry; 40(13): 4053-66.



Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue using p53 antibody.

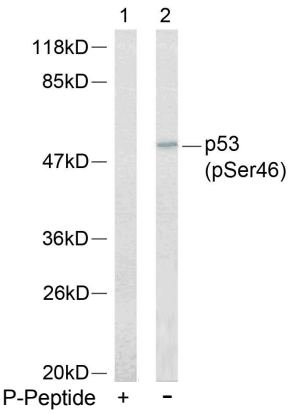


Western blot analysis of extracts from ovary cancer cells using p53 antibody.

p53 (Phospho-Ser46) Antibody

E011099

Catalog Number: E011099-1, E011099-2
Amount: 50μg/50μl, 100μg/100μl
Form of Antibody: Rabbit IgG in phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20˚C/1 year
Immunogen: The antiserum was produced against synthesized phosphopeptide derived from human p53 around the phosphorylation site of serine 46 (M-L-S^P-P-D).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific phosphopeptide. The antibody against non-phosphopeptide was removed by chromatography using non-phosphopeptide corresponding to the phosphorylation site.
Specificity/Sensitivity: p53 (phospho-Ser46) antibody detects endogenous levels of p53 only when phosphorylated at serine 46.
Reactivity: Human
Applications: WB: 1:500~1:1000
Swiss-Prot No. : P04637
References:
Dhavan, R. and Tsai, L.H. (2001) Nat Rev Mol Cell Biol. 2: 749-759.
Patrick, G. N. et al. (1998) J Biol Chem. 273: 24057-24064.
Di Stefano V, et al. (2005) Oncogene. 24(35):5431-5442.
Mayo LD, et al.(2005) J Biol Chem. 280(28):25953-25959.



Western blot analysis of extracts from 293 cells, using p53 antibody.