

Rabbit anti-Human p53 Polyclonal Antibody | anti-TP53 antibody

Phospho-p53 (Ser315) Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA321468	Rabbit	Human	ELISA, Immunoprecipitation, Immunocytochemistry, Immunofluorescence, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

p53; Polyclonal Antibody; Phospho-p53 (Ser315) Antibody; Antigen NY-CO-13; BCC7; Cellular tumor antigen p53; FLJ92943; LFS1; Mutant tumor protein 53; p53 tumor suppressor; P53_HUMAN; Phosphoprotein p53; Tp53; Transformation related protein 53; TRP53; Tumor protein 53; Tumor protein p53; Tumor suppressor p53; anti-TP53 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human
Clonality	Polyclonal
Isotype	IgG
Specificity	Phospho-p53 (Ser315) antibody detects endogenous levels of p53 only when phosphorylated at Serine 315
Purity/Purification	From purified rabbit serum by affinity purification via sequential chromatography on phospho-and non-phospho-peptide affinity columns.
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Sequence Length	393
Applicable Applications for anti-TP53 antibody	ELISA, IP (Immunoprecipitation), ICC (Immunocytochemistry), IF (Immunofluorescence), IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthesized peptide derived from human p53 around the phosphorylation site of Serine 315
Subcellular Location	Cytoplasm; Cytoplasm. Nucleus. Nucleus > PML Body. Endoplasmic Reticulum. Interaction with BANP promotes nuclear localization. Recruited into PML bodies together with CHEK2; Nucleus. Cytoplasm. Localized in both nucleus and cytoplasm in most cells. In some cells, forms foci in the nucleus that are different from nucleoli; Nucleus. Cytoplasm. Localized in the nucleus in most cells but found in the cytoplasm in some cells; Nucleus. Cytoplasm. Localized mainly in the nucleus with minor staining in the cytoplasm; Nucleus. Cytoplasm. Predominantly nuclear but localizes to the cytoplasm when expressed with isoform 4 and Nucleus. Cytoplasm. Predominantly nuclear but translocates to the cytoplasm following cell stress.
Tissue Specificity	Ubiquitous. Isoforms are expressed in a wide range of normal tissues but in a tissue-dependent manner. Isoform 2 is expressed in most normal tissues but is not detected in brain, lung, prostate, muscle, fetal brain, spinal cord and fetal liver. Isoform 3 is expressed in most normal tissues but is not detected in lung, spleen, testis, fetal brain, spinal cord and fetal liver. Isoform 7 is expressed in most normal tissues but is not detected in prostate, uterus, skeletal muscle and breast. Isoform 8 is detected only in colon, bone marrow, testis, fetal brain and intestine. Isoform 9 is expressed in most normal tissues but is not detected in brain, heart, lung, fetal liver, salivary gland, breast or intestine.
Conjugation	Unconjugated
Epitope	Phospho Ser315
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.



WB (Western Blot)

Western blot analysis of p53 phosphorylation expression in ovary cancer whole cell lysates, The lane on the left is treated with the antigen-specific peptide.



IHC (Immunohistochemistry)

AAA321468 at 1/200 staining human kidney sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.



IF (Immunofluorescence)

AAA321468 staining MDA-MB-435 by IF/ICC. The sample were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) Ab, diluted at 1/600, was used as the secondary antibody.

Related Product Information for anti-TP53 antibody

Description: Tumor protein p53, a nuclear protein, plays an essential role in the regulation of cell cycle, specifically in the transition from G0 to G1. It is found in very low levels in normal cells, however, in a variety of transformed cell lines, it is expressed in high amounts, and believed to contribute to transformation and malignancy.

Function: 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. In cooperation with mitochondrial PPIF is involved in activating oxidative stress-induced necrosis; the function is largely independent of transcription. Induces the transcription of long intergenic non-coding RNA p21 (lincRNA-p21) and lincRNA-Mkl1. lincRNA-p21 participates in TP53-dependent transcriptional repression leading to apoptosis and seem to have to effect on cell-cycle regulation. Implicated in Notch signaling cross-over. Prevents CDK7 kinase activity when associated to CAK complex in response to DNA damage, thus stopping cell cycle progression. Isoform 2 enhances the transactivation activity of isoform 1 from some but not all TP53-inducible promoters. Isoform 4 suppresses transactivation activity and impairs growth suppression mediated by isoform 1. Isoform 7 inhibits isoform 1-mediated apoptosis. Regulates the circadian clock by repressing CLOCK-ARNTL/BMAL1-mediated transcriptional activation of PER2 (PubMed:24051492).

Subunit Structure: Interacts with AXIN1. Probably part of a complex consisting of TP53, HIPK2 and AXIN1 (By similarity). Binds DNA as a homotetramer. Interacts with histone acetyltransferases EP300 and methyltransferases HRMT1L2 and CARM1, and recruits them to promoters. In vitro, the interaction of TP53 with cancer-associated/HPV (E6) viral proteins leads to ubiquitination and degradation of TP53 giving a possible model for cell growth regulation. This complex formation requires an additional factor, E6-AP, which stably associates with TP53 in the presence of E6. Interacts (via C-terminus) with TAF1; when TAF1 is part of the TFIID complex. Interacts with ING4; this interaction may be indirect. Found in a complex with CABLES1 and TP73. Interacts with HIPK1, HIPK2, and TP53INP1. Interacts with WWOX. May interact with HCV core protein. Interacts with USP7 and SYVN1. Interacts with HSP90AB1. Interacts with CHD8; leading to recruit histone H1 and prevent transactivation activity (By similarity). Interacts with ARMC10, BANP, CDKN2AIP, NUA1, STK11/LKB1, UHRF2 and E4F1. Interacts with YWHAZ; the interaction enhances TP53 transcriptional activity. Phosphorylation of YWHAZ on 'Ser-58' inhibits this interaction. Interacts (via DNA-binding domain) with MAML1 (via N-terminus). Interacts with MKRN1. Interacts with PML (via C-terminus). Interacts with MDM2; leading to ubiquitination and proteasomal degradation of TP53. Directly interacts with FBXO42; leading to ubiquitination and degradation of TP53. Interacts (phosphorylated at Ser-15 by ATM) with the phosphatase PP2A-PPP2R5C holoenzyme; regulates stress-induced TP53-dependent inhibition of cell proliferation. Interacts with PPP2R2A. Interacts with AURKA, DAXX, BRD7 and TRIM24. Interacts (when monomethylated at Lys-382) with L3MBTL1. Isoform 1 interacts with isoform 2 and with isoform 4. Interacts with GRK5. Binds to the CAK complex (CDK7, cyclin H and MAT1) in response to DNA damage. Interacts with CDK5 in neurons. Interacts with AURKB, SETD2, UHRF2 and NOC2L. Interacts (via N-terminus) with PTK2/FAK1; this promotes ubiquitination by MDM2. Interacts with PTK2B/PYK2; this promotes ubiquitination by MDM2. Interacts with PRKCG. Interacts with PPIF; the association implicates preferentially tetrameric TP53, is induced by oxidative stress and is impaired by cyclosporin A (CsA). Interacts with human cytomegalovirus/HHV-5 protein UL123. Interacts with SNAI1; the interaction induces SNAI1 degradation via MDM2-mediated ubiquitination and inhibits SNAI1-induced cell invasion. Interacts with KAT6A. Interacts with UBC9. Interacts with ZNF385B; the interaction is direct. Interacts (via DNA-binding domain) with ZNF385A; the interaction is direct and enhances p53/TP53 transactivation functions on cell-cycle arrest target genes, resulting in growth arrest. Interacts with ANKRD2. Interacts with RFFL and RNF34; involved in p53/TP53 ubiquitination. Interacts with MTA1 and COP1. Interacts with CCAAR2 (via N-terminus). Interacts (via N-terminus) with human adenovirus 5 E1B-55K protein; this interaction leads to the inhibition of TP53 function and/or its degradation (PubMed:25772236). Interacts with MORC3 (PubMed:17332504). Interacts (via C-terminus) with POU4F2 isoform 1 (via C-terminus) (PubMed:17145718). Interacts (via oligomerization region) with NOP53; the interaction is direct and may prevent the MDM2-mediated proteasomal degradation of TP53 (PubMed:22522597). Interacts with AFG1L; mediates mitochondrial translocation of TP53 (PubMed:27323408). Interacts with UBD (PubMed:25422469).

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. Deacetylation by SIRT2 impairs its ability to induce transcription activation in a AKT-dependent manner. 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. Phosphorylated on Ser-20 by CHEK2 in response to DNA damage, which prevents ubiquitination by MDM2. Phosphorylated on Ser-20 by PLK3 in response to reactive oxygen species (ROS), promoting p53/TP53-mediated apoptosis. Phosphorylated on Thr-55 by TAF1, which promotes MDM2-mediated degradation. Phosphorylated on Ser-33 by CDK7 in a CAK complex in response to DNA damage. 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 on Ser-15 upon ultraviolet irradiation; which is enhanced by interaction with BANP. Phosphorylated by NUA1 at Ser-15 and Ser-392; was initially thought to be mediated by STK11/LKB1 but it was later shown that it is indirect and that STK11/LKB1-dependent phosphorylation is probably mediated by downstream NUA1 (PubMed:21317932). It is unclear whether AMP directly mediates phosphorylation at Ser-15. Phosphorylated on Thr-18 by isoform 1 and isoform 2 of VRK2. Phosphorylation on Thr-18 by isoform 2 of VRK2 results in a reduction in ubiquitination by MDM2 and an increase in acetylation by EP300. Stabilized by CDK5-mediated phosphorylation in response to genotoxic and oxidative stresses at Ser-15, Ser-33 and Ser-46, leading to accumulation of p53/TP53, particularly in the nucleus, thus inducing the transactivation of p53/TP53 target genes. Phosphorylated by DYRK2 at Ser-46 in response to genotoxic stress. Phosphorylated at Ser-315 and Ser-392 by CDK2 in response to DNA-damage. Dephosphorylated by PP2A-PPP2R5C holoenzyme at Thr-55.

NCBI AND UNIPROT INFORMATION

NCBI GI #	120407068
NCBI GeneID	7157
NCBI Accession #	NP_000537.3
NCBI GenBank Nucleotide #	NM_000546.5
UniProt Accession #	P04637; Q15086; Q15087; Q15088; Q16535; Q16807; Q16808; Q16809; Q16810; Q16811; Q16848; Q2XN98
Molecular Weight	Observed: 53 kDa Predicted: 44 kDa
NCBI Official Full Name	cellular tumor antigen p53 isoform a
UniProt Protein Name	Cellular tumor antigen p53
UniProt Gene Name	TP53
UniProt Synonym Gene Names	P53

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