TP53 Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

Product Name	TP53, Polyclonal Antibody
Full Product Name	TP53 Conjugated Antibody
Product Gene Name	anti-TP53 antibody
Product Synonym Names	TP53; FLJ92943; LFS1; TRP53; p53
Clonality	Polyclonal
Host	Rabbit
Species Reactivity	Human
Form/Format	0.01M Sodium Phosphate, 0.25M NaCl, pH 7.6, 5mg/ml Bovine Serum Albumin, 0.02% Sodium Azide
Specificity	The antibody detects endogenous level of total TP53 protein.
Preparation and Storage	Store at 4 degree C for 6 months.
Molecular Weight	43,653 Da
Chromosome Location	Chromosome: 17; NC_000017.10 (7571720..7590868, complement). Location: 17p13.1
OMIM	133239
3D Structure	ModBase 3D Structure for P04637
Immunogen	Recombinant protein of human TP53.
Conjugation	Biotin AF350 AF405 AF488 AF555 AF594 AF647 AF680 AF750
Excitation Emission	AF350: 346nm/442nm
Applications Tested/Suitable for anti-TP53 antibody	Most Applications
Application Notes for anti-TP53 antibody	Suggested Dilution: AF350 conjugated: most applications: 1:50-1:250 AF405 conjugated: most applications: 1:50-1:250 AF488 conjugated: most applications: 1:50-1:250 AF555 conjugated: most applications: 1:50-1:250 AF594 conjugated: most applications: 1:50-1:250 AF647 conjugated: most applications: 1:50-1:250 AF680 conjugated: most applications: 1:50-1:250 AF750 conjugated: most applications: 1:50-1:250 Biotin conjugated: working with enzyme-conjugated streptavidin, most applications: 1:50-1:1000

Related Product Information for anti-TP53 antibody	The TP53 tumor suppressor protein plays a major role in cellular response to DNA damage and other genomic aberrations. Activation of TP53 can lead to either cell cycle arrest and DNA repair or apoptosis (1). TP53 is phosphorylated at multiple sites in vivo and by several different protein kinases in vitro (2, 3). DNA damage induces phosphorylation of TP53 at Ser15 and Ser20 and leads to a reduced interaction between TP53 and its negative regulator, the oncoprotein MDM2 (4). MDM2 inhibits TP53 accumulation by targeting it for ubiquitination and proteasomal degradation (5, 6). TP53 can be phosphorylated by ATM, ATR, and DNA-PK at Ser15 and Ser37. Phosphorylation impairs the ability of MDM2 to bind TP53, promoting both the accumulation and activation of TP53 in response to DNA damage (4, 7). Chk2 and Chk1 can phosphorylate TP53 at Ser20, enhancing its tetramerization, stability, and activity (8, 9). TP53 is phosphorylated at Ser392 in vivo (10, 11) and by CAK in vitro (11). Phosphorylation of TP53 at Ser392 is increased in human tumors (12) and has been reported to influence the growth suppressor function, DNA binding, and transcriptional activation of TP53 (10, 13, 14). TP53 is phosphorylated at Ser6 and Ser9 by CK1delta and CK1epsilon both in vitro and in vivo (13, 15). Phosphorylation of TP53 at Ser46 regulates the ability of TP53 to induce apoptosis (16). Acetylation of TP53 is mediated by p300 and CBP acetyltransferases. Inhibition of deacetylation suppressing MDM2 from recruiting HDAC1 complex by p19 (ARF) stabilizes TP53. Acetylation appears to play a positive role in the accumulation of TP53 protein in stress response (17).
Other Notes	Small volumes of anti-TP53 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for TP53 purchase	MBS9443208 is an antibody targeting TP53. Also known as TP53 Conjugated Antibody. Reactive in Human. Host: Rabbit.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for TP53. It may not necessarily be applicable to this product.

NCBI GI #	120407068
NCBI GeneID	7157
NCBI Accession #	NP_000537.3
UniProt Primary Accession #	P04637
UniProt Secondary Accession #	Q15086; Q15087; Q15088; Q16535; Q16807; Q16808; Q16809; Q16810; Q16811; Q16848; Q2XN98
UniProt Related Accession #	P04637
GenBank Nucleotide #	NM_000546.5
NCBI Official Full Name	cellular tumor antigen p53 isoform a
NCBI Official Synonym Full Names	tumor protein p53
NCBI Official Symbol	TP53
NCBI Official Synonym Symbols	P53; BCC7; LFS1; TRP53
UniProt Protein Name	Cellular tumor antigen p53
UniProt Synonym Protein Names	Antigen NY-CO-13; Phosphoprotein p53; Tumor suppressor p53
Protein Family	Cellular tumor antigen
UniProt Gene Name	TP53
UniProt Synonym Gene Names	P53
UniProt Entry Name	P53_HUMAN
NCBI Protein Information	cellular tumor antigen p53; antigen NY-CO-13; phosphoprotein p53; p53 tumor suppressor; transformation-related protein 53

NCBI Summary for TP53	This gene encodes a tumor suppressor protein containing transcriptional activation, DNA binding, and oligomerization domains. The encoded protein responds to diverse cellular stresses to regulate expression of target genes, thereby inducing cell cycle arrest, apoptosis, senescence, DNA repair, or changes in metabolism. Mutations in this gene are associated with a variety of human cancers, including hereditary cancers such as Li-Fraumeni syndrome. Alternative splicing of this gene and the use of alternate promoters result in multiple transcript variants and isoforms. Additional isoforms have also been shown to result from the use of alternate translation initiation codons (PMIDs: 12032546, 20937277). [provided by RefSeq, Feb 2013]

UniProt Comments for TP53	p53: a transcription factor and major tumor suppressor that plays a major role in regulating cellular responses to DNA damage and other genomic aberrations. Activation of p53 can lead to either cell cycle arrest and DNA repair or apoptosis. More than 50 percent of human tumors contain a mutation or deletion of the TP53 gene. p53 is modified post-translationally at multiple sites. DNA damage induces phosphorylation of p53 at S15, S20 and S37, reducing its interaction with the oncoprotein MDM2. MDM2 inhibits p53 accumulation by targeting it for ubiquitination and proteasomal degradation. Phosphorylated by many kinases including Chk2 and Chk1 at S20, enhancing its tetramerization, stability and activity. The phosphorylation by CAK at S392 is increased in human tumors and has been reported to influence the growth suppressor function, DNA binding and transcriptional activation of p53. Phosphorylation of p53 at S46 regulates the ability of p53 to induce apoptosis. The acetylation of p53 appears to play a positive role in the accumulation of p53 during the stress response. Following DNA damage, p53 becomes acetylated at K382, enhancing its binding to DNA. Deacetylation of p53 can occur through interaction with SIRT1, a deacetylase that may be involved in cellular aging and the DNA damage response. p53 regulates the transcription of a set of genes encoding endosomal proteins that regulate endosomal functions. These include STEAP3 and CHMP4C, which enhance exosome production, and CAV1 and CHMP4C, which produce a more rapid endosomal clearance of the EGFR from the plasma membrane. DNA damage regulates a p53-mediated secretory pathway, increasing the secretion of some proteins such as Hsp90, SERPINE1, SERPINB5, NKEF-A, and CyPA, and inhibiting the secretion of others including CTSL and IGFBP-2. Two alternatively spliced human isoforms have been reported. Isoform 2 is expressed in quiescent lymphocytes. Seems to be non-functional. May be produced at very low levels due to a premature stop codon in the mRNA, leading to nonsense-mediated mRNA decay. Protein type: Motility/polarity/chemotaxis; Tumor suppressor; Nuclear receptor co-regulator; DNA-binding; Transcription factor; Activator Chromosomal Location of Human Ortholog: 17p13.1 Cellular Component: PML body; transcription factor TFIID complex; protein complex; nuclear matrix; mitochondrion; endoplasmic reticulum; replication fork; cytosol; nucleoplasm; nuclear body; mitochondrial matrix; nuclear chromatin; cytoplasm; nucleolus; nucleus; chromatin Molecular Function: identical protein binding; protease binding; protein phosphatase 2A binding; zinc ion binding; p53 binding; protein N-terminus binding; receptor tyrosine kinase binding; protein kinase binding; protein phosphatase binding; transcription factor binding; histone acetyltransferase binding; protein binding; histone deacetylase regulator activity; copper ion binding; enzyme binding; DNA binding; protein heterodimerization activity; ubiquitin protein ligase binding; chaperone binding; damaged DNA binding; chromatin binding; transcription factor activity; ATP binding Biological Process: viral reproduction; positive regulation of apoptosis; multicellular organismal development; positive regulation of transcription, DNA-dependent; T cell differentiation in the thymus; gastrulation; determination of adult life span; DNA damage response, signal transduction by p53 class mediator resulting in cell cycle arrest; regulation of apoptosis; response to antibiotic; cellular response to glucose starvation; protein localization; negative regulation of neuroblast proliferation; base-excision repair; transforming growth factor beta receptor signaling pathway; cerebellum development; protein complex assembly; cell cycle arrest; ER overload response; response to X-ray; somitogenesis; release of cytochrome c from mitochondria; chromatin assembly; cell aging; circadian behavior; rRNA transcription; positive regulation of peptidyl-tyrosine phosphorylation; negative regulation of DNA replication; negative regulation of fibroblast proliferation; embryonic organ development; positive regulation of transcription from RNA polymerase II promoter; regulation of mitochondrial membrane permeability; negative regulation of transcription, DNA-dependent; regulation of tissue remodeling; negative regulation of apoptosis; transcription from RNA polymerase II promoter; G1 DNA damage checkpoint; DNA damage response, signal transduction by p53 class mediator; apoptosis; negative regulation of transcription from RNA polymerase II promoter; response to salt stress; entrainment of circadian clock by photoperiod; positive regulation of protein oligomerization; negative regulation of cell proliferation; DNA damage response, signal transduction by p53 class mediator resulting in transcription of p21 class mediator; positive regulation of histone deacetylation; regulation of transcription, DNA-dependent; T cell proliferation during immune response; positive regulation of neuron apoptosis; double-strand break repair; response to gamma radiation; cell differentiation; DNA damage response, signal transduction by p53 class mediator resulting in induction of apoptosis; protein tetramerization; mitochondrial DNA repair; Notch signaling pathway; in utero embryonic development; multicellular organism growth; B cell lineage commitment; cell proliferation; neuron apoptosis; T cell lineage commitment; negative regulation of helicase activity; nucleotide-excision repair; protein import into nucleus, translocation; Ras protein signal transduction; DNA strand renaturation; negative regulation of cell growth; blood coagulation; negative regulation of transforming growth factor beta receptor signaling pathway; response to DNA damage stimulus Disease: Papilloma Of Choroid Plexus; Pancreatic Cancer; Nasopharyngeal Carcinoma; Breast Cancer; Li-fraumeni Syndrome 1; Osteogenic Sarcoma; Colorectal Cancer; Glioma Susceptibility 1; Adrenocortical Carcinoma, Hereditary; Basal Cell Carcinoma, Susceptibility To, 7; Hepatocellular Carcinoma

Research Articles on TP53	**1.** Positive immunoexpression for protein p53, positive in 95% carcinomas and 74% Reinke's edemas, makes us aware of the possible preneoplastic condition of the latter lesion.
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