P53 ELISA Kit for Rat

PRODUCT OVERVIEW

Product Name	P53, ELISA Kit
Full Product Name	Rat P53 ELISA Kit
Product Gene Name	P53 elisa kit
Species Reactivity	Rat
Preparation and Storage	Store all reagents at 2-8 degree C.
Molecular Weight	24,401 Da
OMIM	X02469 mRNA
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for P53 elisa kit	MBS2610693 is a ready-to-use microwell, strip plate ELISA (enzyme-linked immunosorbent assay) Kit for analyzing the presence of the P53, ELISA Kit target analytes in biological samples. The concentration gradients of the kit standards or positive controls render a theoretical kit detection range in biological research samples containing P53. The ELISA analytical biochemical technique of the MBS2610693 kit is based on P53 antibody-P53 antigen interactions (immunosorbency) and an HRP colorimetric detection system to detect P53 antigen targets in samples. The ELISA Kit is designed to detect native, not recombinant, P53. Appropriate sample types may include undiluted body fluids and/or tissue homogenates, secretions. Quality control assays assessing reproducibility identified the intra-assay CV (%) and inter-assay CV(%).
Other Notes	Small volumes of P53 elisa kit 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.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for P53. It may not necessarily be applicable to this product.

NCBI GI #	23491729
NCBI GeneID	7157
NCBI Accession #	BAC16799.1
UniProt Secondary Accession #	Q15086; Q15087; Q15088; Q16535; Q16807; Q16808; Q16809; Q16810; Q16811; Q16848; Q2XN98
UniProt Related Accession #	P04637
NCBI Official Full Name	P53
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	p53 and DNA damage-regulated protein
UniProt Gene Name	TP53
UniProt Synonym Gene Names	P53

NCBI Protein Information	cellular tumor antigen p53
NCBI Summary for P53	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 from identical transcript variants (PMIDs: 12032546, 20937277). [provided by RefSeq, Dec 2016]

UniProt Comments for P53

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: Activator; DNA-binding; Motility/polarity/chemotaxis; Nuclear receptor co-regulator; Transcription factor; Tumor suppressor

Chromosomal Location of Human Ortholog: 17p13.1

Cellular Component: cytoplasm; cytosol; endoplasmic reticulum; intracellular; mitochondrial matrix; mitochondrion; nuclear body; nuclear chromatin; nuclear matrix; nucleolus; nucleoplasm; nucleus; PML body; protein complex; replication fork; transcription factor TFIID complex

Molecular Function: ATP binding; chaperone binding; chromatin binding; copper ion binding; damaged DNA binding; DNA binding; DNA binding transcription factor activity; enzyme binding; histone acetyltransferase binding; histone deacetylase binding; identical protein binding; mRNA 3'-UTR binding; p53 binding; protease binding; protein binding; protein C-terminus binding; protein heterodimerization activity; protein kinase binding; protein N-terminus binding; protein phosphatase 2A binding; protein phosphatase binding; protein self-association; receptor tyrosine kinase binding; transcription factor binding; transcription regulatory region DNA binding; ubiquitin protein ligase binding; zinc ion binding

Biological Process: autophagy; base-excision repair; cell aging; cell cycle arrest; cell differentiation; cell proliferation; cellular response to DNA damage stimulus; cellular response to gamma radiation; cellular response to glucose starvation; cellular response to heat; cellular response to hypoxia; cellular response to ionizing radiation; cellular response to reactive oxygen species; cellular response to UV; chromatin assembly; circadian behavior; determination of adult lifespan; DNA damage response, signal transduction by p53 class mediator; DNA damage response, signal transduction by p53 class mediator resulting in cell cycle arrest; DNA damage response, signal transduction by p53 class mediator resulting in transcription of p21 class mediator; DNA strand renaturation; entrainment of circadian clock by photoperiod; ER overload response; G1 DNA damage checkpoint; intrinsic apoptotic signaling pathway by p53 class mediator; intrinsic apoptotic signaling pathway in response to DNA damage by p53 class mediator; mRNA transcription; multicellular organism development; negative regulation of apoptosis; negative regulation of cell growth; negative regulation of cell proliferation; negative regulation of fibroblast proliferation; negative regulation of helicase activity; negative regulation of smooth muscle cell proliferation; negative regulation of telomerase activity; negative regulation of transcription from RNA polymerase II promoter; negative regulation of transcription, DNA-dependent; nucleotide-excision repair; oxidative stress-induced premature senescence; positive regulation of apoptosis; positive regulation of cell cycle arrest; positive regulation of execution phase of apoptosis; positive regulation of gene expression; positive regulation of histone deacetylation; positive regulation of intrinsic apoptotic signaling pathway; positive regulation of leukocyte migration; positive regulation of neuron apoptotic process; positive regulation of peptidyl-tyrosine phosphorylation; positive regulation of protein export from nucleus; positive regulation of protein insertion into mitochondrial membrane involved in apoptotic signaling pathway; positive regulation of protein oligomerization; positive regulation of reactive oxygen species metabolic process; positive regulation of release of cytochrome c from mitochondria; positive regulation of transcription from RNA polymerase II promoter; positive regulation of transcription from RNA polymerase II promoter in response to endoplasmic reticulum stress; positive regulation of transcription, DNA-templated; proteasomal ubiquitin-dependent protein catabolic process; protein complex assembly; protein deubiquitination; protein homotetramerization; protein localization; protein tetramerization; Ras protein signal transduction; regulation of apoptosis; regulation of cell cycle G2/M phase transition; regulation of intracellular pH; regulation of mitochondrial membrane permeability; regulation of transcription, DNA-templated; replicative senescence; response to amino acid; response to antibiotic; response to caffeine; response to cytokine; response to ethanol; response to gamma radiation; response to hyperoxia; response to metal ion; response to retinoic acid; response to UV-B; response to vitamin B2; response to X-ray; signal transduction by p53 class mediator; transcription from RNA polymerase II promoter; viral process; wound healing

Research Articles on P53	**1.** Clustered regularly interspaced short palindromic repeat (CRISPR)/Cas9-mediated ablation of double-stranded RNA (dsRNA)-activated protein kinase R (PKR) restored p53 responses while boosting hepatitis C virus replication, showing that p53 inhibition results directly from viral activation of PKR.
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