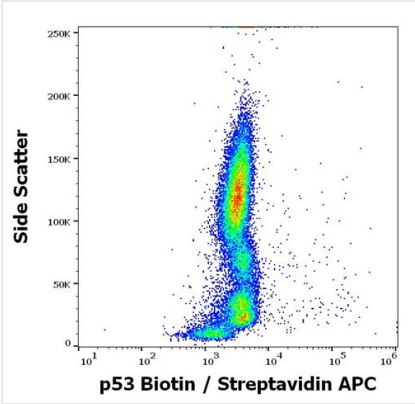
p53 Antibody – Mouse

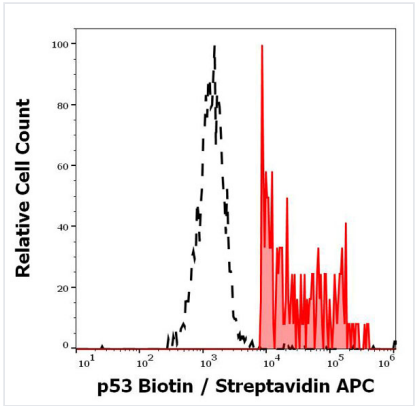
PRODUCT OVERVIEW

Product Name	p53, Antibody
Full Product Name	Anti-p53 Biotin
Product Gene Name	anti-p53 antibody
Product Synonym Gene Name	TP53
Product Synonym Names	tumor protein p53; BCC7, TRP53, TP53, LFS1
Isotype	Mouse IgG2a
Clone Number	BP53-12
Host	Mouse
Species Reactivity	Human, Non-human primates
Form/Format	Phosphate buffered saline (PBS), pH 7.4, 15 mM sodium azide
Purity/Purification	Purified antibody is conjugated with biotin LC-NHS ester under optimum conditions and unconjugated antibody and free biotin are removed by size-exclusion chromatography.
Concentration	1mg/ml (lot specific)
Specificity	The antibody BP53-12 recognizes a defined epitope (aa 16-25) on human p53, a 50 kDa intracellular tumour suppressor found in increased amounts in a wide variety of transformed cells; it is frequently mutated or inactivated in many types of cancer.
Preparation and Storage	Store at 2-8 degree C. Do not freeze.
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	Bacterially expressed full-length wild-type p53
Conjugation	Biotin
Applications Tested/Suitable for anti-p53 antibody	Western Blot (WB), Immunohistochemistry-Paraffin (IHC-P), Immunocytochemistry (ICC), Flow cytometry of intracellularly stained cells (IF-IC)(QC tested), ELISA (EIA), Immunoprecipitation (IP)
Application Notes for anti-p53 antibody	FC/FACS: Recommended dilution: 1-5ug/ml. Intracellular staining.
Related Product Information for anti-p53 antibody	The tumour suppressor protein p53 is a key element of intracellular anticancer protection. It mediates cell cycle arrest or apoptosis in response to DNA damage or to starvation for pyrimidine nukleotides. It is up-regulated in response to these stress signals and stimulated to activate transcription of specific genes, resulting in expression of p21waf1 and other proteins involved in G1 or G2/M arrest, or proteins that trigger apoptosis, such as Bcl-2. The structure of p53 comprises N-terminal transactivation domain, central DNA-binding domain, oligomerisation domain, and C-terminal regulatory domain. There are various phosphorylation sites on p53, of which the phosphorylation at Ser15 is important for p53 activation and stabilization.

Product References and Citations for anti-p53 antibody	*Agarwal ML, Agarwal A, Taylor WR, Stark GR: p53 controls both the G2/M and the G1 cell cycle checkpoints and mediates reversible growth arrest in human fibroblasts. Proc Natl Acad Sci U S A. 1995 Aug 29;92(18):8493-7., URL: https://www.ncbi.nlm.nih.gov/pubmed/7667317 ordina,*Agarwal ML, Agarwal A, Taylor WR, Chernova O, Sharma Y, Stark GR: A p53-dependent S-phase checkpoint helps to protect cells from DNA damage in response to starvation for pyrimidine nucleotides. Proc Natl Acad Sci U S A. 1998 Dec 8;95(25):14775-80., URL: https://www.ncbi.nlm.nih.gov/pubmed/9843965 ordina,*Taylor WR, DePrimo SE, Agarwal A, Agarwal ML, Schonthal AH, Katula KS, Stark GR: Mechanisms of G2 arrest in response to overexpression of p53. Mol Biol Cell. 1999 Nov;10(11):3607-22., URL: https://www.ncbi.nlm.nih.gov/pubmed/10564259?ordin,*Taylor WR, Agarwal ML, Agarwal A, Stacey DW, Stark GR: p53 inhibits entry into mitosis when DNA synthesis is blocked. Oncogene. 1999 Jan 14;18(2):283-95., URL: https://www.ncbi.nlm.nih.gov/pubmed/9927185 ordina,*Tanigawa S, Fujii M, Hou DX: Stabilization of p53 is involved in quercetin-induced cell cycle arrest and apoptosis in HepG2 cells. Biosci Biotechnol Biochem. 2008 Mar;72(3):797-804., URL: https://www.ncbi.nlm.nih.gov/pubmed/18323654?ordin, *Bartek J, Bartkova J, Vojtesek B, Staskova Z, Lukas J, Rejthar A, Kovarik J, Midgley CA, Gannon JV, Lane DP: Aberrant expression of the p53 oncoprotein is a common feature of a wide spectrum of human malignancies. Oncogene. 1991 Sep;6(9):1699-703., URL: https://www.ncbi.nlm.nih.gov/pubmed/1923535?dopt=A,*Bartkova J, Bartek J, Lukas J, Vojtesek B, Staskova Z, Rejthar A, Kovarik J, Midgley CA, Lane DP: p53 protein alterations in human testicular cancer including pre-invasive intratubular germ-cell neoplasia. Int J Cancer. 1991 Sep 9;49(2):196-202., URL: https://www.ncbi.nlm.nih.gov/pubmed/1652567?dopt=A,*Rossner P Jr, Binková B, Chvátalová I, Srám RJ: Acrylonitrile exposure: the effect on p53 and p21(WAF1) protein levels in the blood plasma of occupationally exposed workers and in vitro in human diploid lung fibroblasts. Mutat Res. 2002 May 27;517(1-2):239-50., URL: https://www.ncbi.nlm.nih.gov/pubmed/12034325 ,*Dolezalova H, Vojtesek B, Kovarik J: Epitope analysis of the human p53 tumour suppressor protein. Folia Biol (Praha). 1997;43(1):49-51. , URL: https://www.ncbi.nlm.nih.gov/pubmed/9158951?dopt=A,
Other Notes	Small volumes of anti-p53 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 p53 purchase	MBS1802440 is an antibody targeting p53. Also known as Anti-p53 Biotin. Reactive in Human, Non-human primates. Host: Mouse.



Flow Cytometry (FCM/FACS) of anti-p53 antibody
Flow cytometry intracellular staining pattern of human peripheral whole blood stained using anti-p53 (BP53-12) Biotin antibody (concentration in sample 1ug/ml, Streptavidin APC).



Flow Cytometry (FCM/FACS) of anti-p53 antibody
Separation of human p53 high positive leukocytes (red-filled) from blood debris (black-dashed) in flow cytometry analysis (intracellular staining) of human peripheral whole blood stained using anti-p53 (BP53-12) Biotin antibody (concentration in sample 1ug/ml, Streptavidin APC).

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for p53. 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	p53 and DNA damage-regulated protein
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 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 (PMIDs: 12032546, 20937277). [provided by RefSeq, Feb 2013]

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: 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 p53	**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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