

**Anti-p53 (MOUSE) Monoclonal Antibody**  
**p53 Antibody**  
**Catalog # ASR4137**

**Specification**

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**Anti-p53 (MOUSE) Monoclonal Antibody - Product Information**

Host	Mouse
Conjugate	Unconjugated
Target Species	Human
Reactivity	Human
Clonality	Monoclonal
Application	WB, IHC, E, IP, I, LCI
Application Note	Anti-p53 has been tested by western blot and immunofluorescence and is suitable for CHIP, flow cytometry, immunohistochemistry, Immunofluorescence, immunoblotting and immunoprecipitation. p53 is the most commonly mutated gene in spontaneously occurring human cancers. Mutations arise with an average frequency of 70% but incidence varies from zero in carcinoid lung tumors to 97% in primary melanomas. High concentrations of p53 protein are transiently expressed in human epidermis and superficial dental fibroblasts following mild ultraviolet irradiation. This antibody reacts with an N-terminal epitope of the 53 kD gene product and this epitope is not destroyed by formalin-fixation and routine paraffin embedding. Microwaving is needed for optimal staining.
Physical State	Liquid (sterile filtered)
Buffer	0.02 M Potassium Phosphate, 0.5 M Sodium Chloride, pH 7.2
Immunogen	This protein A purified monoclonal antibody was produced by repeated immunizations with recombinant human p53 protein.
Preservative	0.01% (w/v) Sodium Azide

**Anti-p53 (MOUSE) Monoclonal Antibody - Additional Information**

**Gene ID 7157**

**Other Names**  
7157

**Purity**

This protein A purified mouse monoclonal antibody reacts specifically with p53 in human tissues and cell lines. The antibody recognizes a 53 kDa band corresponding to p53. Cross reactivity with p53 from other sources has not been determined.

### Storage Condition

Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

### Precautions Note

This product is for research use only and is not intended for therapeutic or diagnostic applications.

## Anti-p53 (MOUSE) Monoclonal Antibody - Protein Information

**Name** TP53

**Synonyms** P53

### Function

Multifunctional transcription factor that induces cell cycle arrest, DNA repair or apoptosis upon binding to its target DNA sequence (PubMed:<a href="http://www.uniprot.org/citations/11025664" target="\_blank">11025664</a>, PubMed:<a href="http://www.uniprot.org/citations/12524540" target="\_blank">12524540</a>, PubMed:<a href="http://www.uniprot.org/citations/12810724" target="\_blank">12810724</a>, PubMed:<a href="http://www.uniprot.org/citations/15186775" target="\_blank">15186775</a>, PubMed:<a href="http://www.uniprot.org/citations/15340061" target="\_blank">15340061</a>, PubMed:<a href="http://www.uniprot.org/citations/17317671" target="\_blank">17317671</a>, PubMed:<a href="http://www.uniprot.org/citations/17349958" target="\_blank">17349958</a>, PubMed:<a href="http://www.uniprot.org/citations/19556538" target="\_blank">19556538</a>, PubMed:<a href="http://www.uniprot.org/citations/20673990" target="\_blank">20673990</a>, PubMed:<a href="http://www.uniprot.org/citations/20959462" target="\_blank">20959462</a>, PubMed:<a href="http://www.uniprot.org/citations/22726440" target="\_blank">22726440</a>, PubMed:<a href="http://www.uniprot.org/citations/24051492" target="\_blank">24051492</a>, PubMed:<a href="http://www.uniprot.org/citations/24652652" target="\_blank">24652652</a>, PubMed:<a href="http://www.uniprot.org/citations/9840937" target="\_blank">9840937</a>, PubMed:<a href="http://www.uniprot.org/citations/35618207" target="\_blank">35618207</a>, PubMed:<a href="http://www.uniprot.org/citations/36634798" target="\_blank">36634798</a>, PubMed:<a href="http://www.uniprot.org/citations/38653238" target="\_blank">38653238</a>). Acts as a tumor suppressor in many tumor types; induces growth arrest or apoptosis depending on the physiological circumstances and cell type (PubMed:<a href="http://www.uniprot.org/citations/11025664" target="\_blank">11025664</a>, PubMed:<a href="http://www.uniprot.org/citations/12524540" target="\_blank">12524540</a>, PubMed:<a href="http://www.uniprot.org/citations/12810724" target="\_blank">12810724</a>, PubMed:<a href="http://www.uniprot.org/citations/15186775" target="\_blank">15186775</a>, PubMed:<a href="http://www.uniprot.org/citations/15340061" target="\_blank">15340061</a>, PubMed:<a href="http://www.uniprot.org/citations/17189187" target="\_blank">17189187</a>, PubMed:<a href="http://www.uniprot.org/citations/17317671" target="\_blank">17317671</a>, PubMed:<a href="http://www.uniprot.org/citations/17349958" target="\_blank">17349958</a>, PubMed:<a href="http://www.uniprot.org/citations/19556538" target="\_blank">19556538</a>, PubMed:<a href="http://www.uniprot.org/citations/20673990" target="\_blank">20673990</a>, PubMed:<a href="http://www.uniprot.org/citations/20959462" target="\_blank">20959462</a>, PubMed:<a href="http://www.uniprot.org/citations/22726440" target="\_blank">22726440</a>, PubMed:<a href="http://www.uniprot.org/citations/24051492" target="\_blank">24051492</a>, PubMed:<a href="http://www.uniprot.org/citations/24652652" target="\_blank">24652652</a>, PubMed:<a href="http://www.uniprot.org/citations/9840937" target="\_blank">9840937</a>).

PubMed:<a href="http://www.uniprot.org/citations/38653238" target="\_blank">38653238</a>). Negatively regulates cell division by controlling expression of a set of genes required for this process (PubMed:<a href="http://www.uniprot.org/citations/11025664" target="\_blank">11025664</a>, PubMed:<a href="http://www.uniprot.org/citations/12524540" target="\_blank">12524540</a>, PubMed:<a href="http://www.uniprot.org/citations/12810724" target="\_blank">12810724</a>, PubMed:<a href="http://www.uniprot.org/citations/15186775" target="\_blank">15186775</a>, PubMed:<a href="http://www.uniprot.org/citations/15340061" target="\_blank">15340061</a>, PubMed:<a href="http://www.uniprot.org/citations/17317671" target="\_blank">17317671</a>, PubMed:<a href="http://www.uniprot.org/citations/17349958" target="\_blank">17349958</a>, PubMed:<a href="http://www.uniprot.org/citations/19556538" target="\_blank">19556538</a>, PubMed:<a href="http://www.uniprot.org/citations/20673990" target="\_blank">20673990</a>, PubMed:<a href="http://www.uniprot.org/citations/20959462" target="\_blank">20959462</a>, PubMed:<a href="http://www.uniprot.org/citations/22726440" target="\_blank">22726440</a>, PubMed:<a href="http://www.uniprot.org/citations/24051492" target="\_blank">24051492</a>, PubMed:<a href="http://www.uniprot.org/citations/24652652" target="\_blank">24652652</a>, PubMed:<a href="http://www.uniprot.org/citations/9840937" target="\_blank">9840937</a>). 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 (PubMed:<a href="http://www.uniprot.org/citations/12524540" target="\_blank">12524540</a>, PubMed:<a href="http://www.uniprot.org/citations/17189187" target="\_blank">17189187</a>). Its pro-apoptotic activity is activated via its interaction with PPP1R13B/ASPP1 or TP53BP2/ASPP2 (PubMed:<a href="http://www.uniprot.org/citations/12524540" target="\_blank">12524540</a>). However, this activity is inhibited when the interaction with PPP1R13B/ASPP1 or TP53BP2/ASPP2 is displaced by PPP1R13L/iASPP (PubMed:<a href="http://www.uniprot.org/citations/12524540" target="\_blank">12524540</a>). 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-Mkln1. LincRNA-p21 participates in TP53-dependent transcriptional repression leading to apoptosis and seems to have an 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-BMAL1-mediated transcriptional activation of PER2 (PubMed:<a href="http://www.uniprot.org/citations/24051492" target="\_blank">24051492</a>).

### Cellular Location

Cytoplasm. Nucleus. Nucleus, PML body. Endoplasmic reticulum. Mitochondrion matrix. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome Note=Recruited into PML bodies together with CHEK2 (PubMed:12810724) Translocates to mitochondria upon oxidative stress (PubMed:22726440) Translocates to mitochondria in response to mitomycin C treatment (PubMed:27323408). Competitive inhibition of TP53 interaction with HSPA9/MOT-2 by UBXN2A results in increased protein abundance and subsequent translocation of TP53 to the nucleus (PubMed:24625977) [Isoform 2]: Nucleus. Cytoplasm. Note=Localized mainly in the nucleus with minor staining in the cytoplasm [Isoform 4]: Nucleus. Cytoplasm. Note=Predominantly nuclear but translocates to the cytoplasm following cell stress [Isoform 8]: Nucleus. Cytoplasm. Note=Localized in both nucleus and cytoplasm in most cells. In some cells, forms foci in the nucleus that are different from nucleoli

### Tissue Location

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

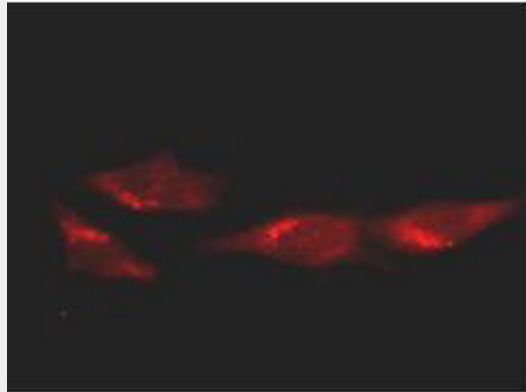
most normal tissues but is not detected in brain, heart, lung, fetal liver, salivary gland, breast or intestine

### **Anti-p53 (MOUSE) Monoclonal Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### **Anti-p53 (MOUSE) Monoclonal Antibody - Images**



Immunofluorescence microscopy of HeLa cells using anti-p53. Rockland's Protein A purified Mab anti-p53 was used at a 1:100 dilution in 10% normal goat serum in PBS and reacted overnight at 4° C. After washes cells were incubated with a 1:500 dilution of AlexaFluor594 Goat-a-Mouse IgG diluted in normal goat serum for 1 h at room temperature. Personnel Communication. Kuldeep Patel, Loyola University.

### **Anti-p53 (MOUSE) Monoclonal Antibody - Background**

The p53 gene like the Rb gene, is a tumor suppressor gene. 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; its activity stops the formation of tumors. If a person inherits only one functional copy of the p53 gene from their parents, they are pre-disposed to cancer and usually develop several independent tumors in a variety of tissues in early adulthood. This condition is rare, and is known as Li-Fraumeni syndrome. However, mutations in p53 are found in most tumor types, and so contribute to the complex network of molecular events leading to tumor formation. Anti-p53 Antibody is ideal for investigators involved in Signaling Proteins, Cell Cycle Proteins, Apoptosis/Autophagy, Cancer, Cardiovascular Disease, Cell Cycle, Cellular Stress, Inflammation, JNK/SAPK Pathway, Metabolic Disorder, Neurobiology, and p38 Pathway research.