

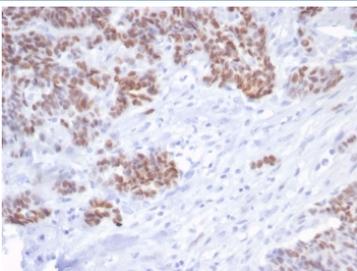
## TP53 Antibody / DNA Damage Response Protein Antibody [clone rTP53/6940] (V9426)

Catalog No.	Formulation	Size
V9426-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V9426-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V9426SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

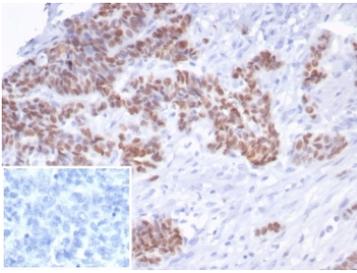
Recombinant **MOUSE MONOCLONAL**

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<b>Availability</b>	1-3 business days
<b>Species Reactivity</b>	Human
<b>Format</b>	Purified
<b>Host</b>	Mouse
<b>Clonality</b>	Recombinant Mouse Monoclonal
<b>Isotype</b>	Mouse IgG1, kappa
<b>Clone Name</b>	rTP53/6940
<b>Purity</b>	Protein A/G affinity
<b>UniProt</b>	P04637
<b>Localization</b>	Nucleus
<b>Applications</b>	Immunohistochemistry (FFPE) : 1-2ug/ml
<b>Limitations</b>	This recombinant TP53 antibody is available for research use only.



TP53 Antibody / DNA Damage Response Protein Antibody immunohistochemistry of human serous ovarian carcinoma. Formalin-fixed, paraffin-embedded human serous ovarian carcinoma tissue was stained using recombinant mouse monoclonal antibody clone rTP53/6940. Strong HRP-DAB brown nuclear staining is observed in tumor epithelial cells, consistent with nuclear localization of the TP53 DNA damage response protein p53. Hematoxylin counterstain provides nuclear contrast. Antigen retrieval was performed by boiling tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min followed by cooling prior to staining.



TP53 Antibody / DNA Damage Response Protein Antibody immunohistochemistry of human serous ovarian carcinoma. Formalin-fixed, paraffin-embedded human serous ovarian carcinoma tissue was stained using recombinant mouse monoclonal antibody clone rTP53/6940. Strong HRP-DAB brown nuclear staining is observed in tumor epithelial cells, consistent with nuclear localization of the TP53 DNA damage response protein p53. Hematoxylin counterstain provides nuclear contrast. Negative control inset shows PBS used in place of the primary antibody, demonstrating absence of non-specific secondary antibody binding. Antigen retrieval was performed by boiling tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min followed by cooling prior to staining.

## Description

Tumor protein p53 (TP53) is a nuclear transcription factor that functions as one of the most important DNA damage response proteins in mammalian cells. Acting as a central genomic surveillance factor, p53 senses DNA damage and coordinates transcriptional programs that maintain genome integrity. The TP53 Antibody / DNA Damage Response Protein Antibody detects this critical DNA damage response protein, commonly known as p53, which is rapidly stabilized and activated following cellular stress such as ionizing radiation, replication stress, or oxidative damage.

TP53 antibody, also referred to as p53 antibody or Tumor protein p53 antibody in the literature, targets a protein that sits at the core of the cellular DNA damage response network. Under normal physiological conditions the DNA damage response protein p53 is maintained at very low levels through continuous ubiquitin-mediated degradation controlled primarily by the E3 ubiquitin ligase MDM2. When DNA damage occurs, signaling kinases such as ATM, ATR, CHK1, and CHK2 phosphorylate p53 and its regulatory partners, disrupting MDM2-mediated degradation and allowing rapid accumulation of the DNA damage response protein in the nucleus.

Once stabilized, the DNA damage response protein p53 functions as a sequence-specific transcription factor that binds regulatory DNA elements within genes responsible for genome protection. Activation of TP53 signaling initiates transcription of genes that enforce cell cycle checkpoints, promote DNA repair pathways, or eliminate severely damaged cells through apoptosis. One of the most well characterized transcriptional targets of the DNA damage response protein p53 is CDKN1A (p21), which mediates G1 and G2 cell cycle arrest following genotoxic stress.

Through these transcriptional programs the DNA damage response protein p53 prevents replication of damaged DNA and protects cells from accumulating mutations. If DNA damage cannot be repaired successfully, p53 activates pro-apoptotic signaling pathways that remove compromised cells from the population. This includes transcriptional induction of apoptosis-regulating genes such as BAX, PUMA, and NOXA, which promote mitochondrial outer membrane permeabilization and caspase activation.

Loss of TP53 DNA damage response function is one of the most common molecular events in human cancer. Mutations affecting TP53 impair the ability of cells to respond properly to DNA damage, allowing cells with genetically unstable genomes to continue proliferating. In many tumors mutant forms of the DNA damage response protein accumulate within the nucleus due to impaired degradation pathways, resulting in elevated p53 protein levels frequently observed in cancer tissues.

A recombinant mouse monoclonal TP53 antibody such as clone rTP53/6940 is suitable for detecting the p53 DNA damage response protein in studies investigating genome stability mechanisms, cellular stress signaling pathways, and molecular events that drive tumor development.

## Application Notes

Optimal dilution of the TP53 Antibody / DNA Damage Response Protein Antibody should be determined by the researcher.

## **Immunogen**

Recombinant full-length human TP53 protein was used as the immunogen for the TP53 Antibody / DNA Damage Response Protein Antibody.

## **Storage**

Aliquot the recombinant TP53 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

## **Alternate Names**

p53 antibody, Tumor protein p53 antibody, Cellular tumor antigen p53 antibody, Phosphoprotein p53 antibody, Transformation related protein 53 antibody