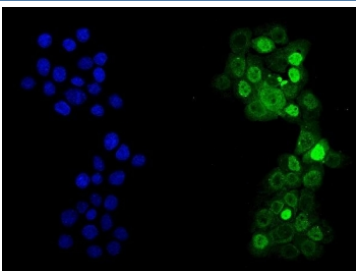


## p53 Antibody for IF / Tumor Protein p53 Immunofluorescence Antibody (R31441)

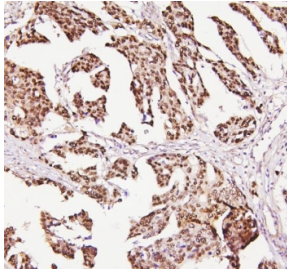
Catalog No.	Formulation	Size
R31441	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

[Bulk quote request](#)

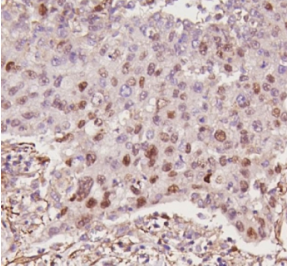
<b>Availability</b>	1-3 business days
<b>Species Reactivity</b>	Human
<b>Format</b>	Antigen affinity purified
<b>Host</b>	Rabbit
<b>Clonality</b>	Polyclonal (rabbit origin)
<b>Isotype</b>	Rabbit IgG
<b>Purity</b>	Antigen affinity
<b>Buffer</b>	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
<b>UniProt</b>	P04637
<b>Localization</b>	Nuclear
<b>Applications</b>	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells
<b>Limitations</b>	This p53 antibody is available for research use only.



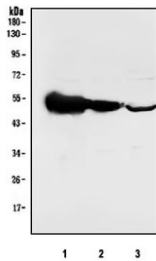
p53 Antibody for IF / Tumor Protein p53 Immunofluorescence Antibody. Immunofluorescence analysis of FFPE human A431 cells demonstrates nuclear localization of p53 detected with p53 Antibody for IF / Tumor Protein p53 Immunofluorescence Antibody (green). Nuclei are counterstained with DAPI nuclear stain (blue). The fluorescence pattern shows strong nuclear enrichment of Tumor protein p53 consistent with TP53 transcription factor localization in carcinoma cells. Heat-induced epitope retrieval was performed by steaming sections in pH6 citrate buffer for 20 minutes prior to immunofluorescence staining and microscopy.



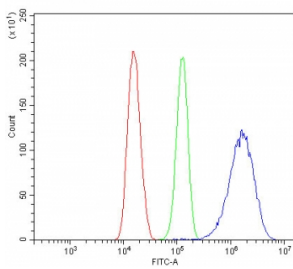
IHC staining of FFPE human ovarian cancer tissue with p53 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



IHC staining of FFPE human lung cancer tissue with p53 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Western blot testing of human 1) Caco-2, 2) HepG2 and 3) A431 cell lysate with p53 antibody. Predicted molecular weight ~53 kDa.



Flow cytometry testing of fixed and permeabilized human Caco-2 cells with p53 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= p53 antibody.

## Description

Tumor protein p53 (TP53) is a sequence-specific transcription factor and central tumor suppressor that regulates DNA damage responses, cell cycle arrest, apoptosis, and cellular senescence. A p53 Antibody for IF is widely used in immunofluorescence microscopy to visualize nuclear p53 localization, stress-induced stabilization, and intracellular distribution patterns of this critical cancer-associated protein in cultured cells and tissue specimens.

TP53 antibody, also referred to as Tumor protein p53 antibody or Cellular tumor antigen p53 antibody in the literature, targets one of the most extensively studied proteins in cancer biology. The TP53 gene is located on chromosome 17p13.1 and encodes a transcription factor belonging to the p53 family of DNA-binding proteins. Structurally, p53 contains an N-terminal transcriptional activation domain, a central DNA-binding domain responsible for sequence-specific transcriptional control, a tetramerization domain that enables formation of active p53 complexes, and a C-terminal regulatory region that modulates DNA binding and protein stability.

Under normal cellular conditions, p53 protein levels are tightly controlled through rapid ubiquitination and proteasomal degradation mediated primarily by the E3 ubiquitin ligase MDM2. When cells encounter genotoxic stress such as DNA damage, oncogene activation, oxidative stress, or hypoxia, this regulatory pathway is disrupted and p53 becomes stabilized. The stabilized protein accumulates within the nucleus where it activates transcription of genes including

CDKN1A (p21), BAX, and PUMA that regulate cell cycle arrest and apoptosis. Because this activation results in pronounced nuclear accumulation, a p53 Antibody for IF is commonly used in immunofluorescence assays to detect p53 stabilization and nuclear transcriptional activity at the single-cell level.

Mutations in TP53 are the most frequent genetic alterations observed in human cancers and often lead to increased stability and nuclear retention of the mutant protein. As a result, tumor cells frequently exhibit strong nuclear fluorescence when stained using a p53 Antibody for IF during immunofluorescence microscopy. This nuclear staining pattern provides a visual indicator of p53 pathway disruption and has made p53 immunofluorescence analysis an important tool in studies of tumor development, oncogenic signaling, and cellular stress responses.

Immunofluorescence imaging with a p53 Antibody for IF allows researchers to directly observe intracellular localization patterns of the protein, including nuclear enrichment, diffuse nuclear staining, or redistribution during cellular stress. In many experimental systems, p53 appears as bright nuclear fluorescence corresponding to stabilized transcriptionally active complexes bound to chromatin. These visualization capabilities make immunofluorescence microscopy particularly useful for investigating p53 activation following DNA damage, chemotherapeutic treatment, or oncogenic signaling pathways.

Beyond its classical tumor suppressor function, p53 participates in a wide range of cellular processes including metabolic regulation, autophagy, immune signaling, and stem cell maintenance. The protein interacts with multiple regulatory partners such as MDM2, ATM, ATR, p300/CBP, and chromatin remodeling complexes that influence transcriptional outcomes and protein localization. Because many of these regulatory events alter nuclear abundance and distribution of the protein, immunofluorescence analysis using a p53 Antibody for IF provides a powerful approach for studying p53 signaling dynamics, nuclear organization, and tumor suppressor activity in normal and transformed cells.

## Application Notes

Titration of the p53 Antibody for IF / Tumor Protein p53 Immunofluorescence Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

## Immunogen

Human partial recombinant protein (AA 74-393) was used as the immunogen for this p53 Antibody for IF / Tumor Protein p53 Immunofluorescence Antibody.

## Storage

After reconstitution, the p53 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

## Alternate Names

TP53 antibody, Tumor protein p53 antibody, Cellular tumor antigen p53 antibody, p53 tumor suppressor antibody