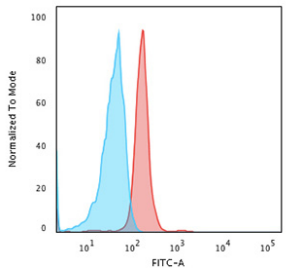
Cellular Tumor Antigen p53 Antibody / TP53 [clone rTP53/3780] (V6013)

Catalog No.	Formulation	Size
V6013-100UG	0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V6013-20UG	0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug
V6013SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

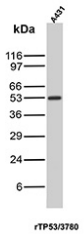
Recombinant MOUSE MONOCLONAL

Bulk quote request

Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Recombinant Mouse Monoclonal
Isotype	Mouse IgG1, kappa
Clone Name	rTP53/3780
Purity	Protein G affinity
UniProt	P04637
Localization	Nucleus
Applications	Flow Cytometry : 1-2ug/million cells Western Blot : 2-4ug/ml
Limitations	This Cellular Tumor Antigen p53/TP53 antibody is available for research use only.



TP53 Antibody for Flow Cytometry / Cellular Tumor Antigen p53 FACS Antibody. Flow cytometry analysis of human HeLa cells stained with TP53 antibody clone rTP53/3780 following paraformaldehyde fixation shows a clear rightward fluorescence shift of the antibody-stained population (red histogram) compared with the isotype control (blue histogram). The shift indicates specific intracellular detection of Tumor protein p53 / TP53 in HeLa cells. The fluorescence distribution reveals a distinct positive population with minimal overlap with the control, consistent with nuclear accumulation of p53 in this carcinoma cell line. The x-axis represents FITC-A fluorescence intensity on a logarithmic scale and the y-axis represents events normalized to mode.



Cellular Tumor Antigen p53 Antibody / TP53 antibody (clone rTP53/3780). Western blot analysis of human A431 cell lysate shows a band at approximately 53 kDa, consistent with the predicted molecular weight of Tumor protein p53 / TP53. This result demonstrates detection of endogenous p53 protein in A431 cells by western blot.

Description

Cellular Tumor antigen p53 antibody recognizes Tumor protein 53, a nuclear transcription factor encoded by the TP53 gene and widely known as p53, one of the most extensively studied tumor suppressors in human biology. Tumor protein 53 functions as a critical regulator of genomic stability by controlling genes involved in cell cycle arrest, DNA repair, apoptosis, and cellular senescence. Under normal physiological conditions, p53 levels are tightly regulated through MDM2 mediated ubiquitination and proteasomal degradation, ensuring controlled cell proliferation and tissue homeostasis.

In response to cellular stress such as DNA damage, oncogene activation, hypoxia, or oxidative stress, p53 becomes stabilized through post translational modifications including phosphorylation and acetylation. Stabilized p53 accumulates in the nucleus, where it binds specific DNA response elements and activates transcription of downstream targets including CDKN1A, BAX, and PUMA. Through these pathways, Tumor protein 53 halts cell cycle progression to permit DNA repair or induces apoptosis when genomic damage is irreparable. This stress responsive checkpoint mechanism prevents propagation of genetically unstable cells and plays a central role in tumor suppression.

Mutations in TP53 are among the most common genetic alterations in human cancers. Many tumor associated mutations result in production of a stable but dysfunctional p53 protein that accumulates in the nucleus. This nuclear accumulation frequently produces strong immunoreactivity in malignant tissues, making p53 antibody a widely used tool in oncology research and tumor characterization studies. In addition to loss of tumor suppressive function, certain mutant p53 variants may acquire gain of function properties that contribute to tumor progression, invasion, and therapeutic resistance.

Tumor protein 53 is predominantly localized to the nucleus, consistent with its role as a transcription factor, although cytoplasmic staining may be observed depending on mutation status and cellular context. The recombinant mouse monoclonal antibody clone rTP53/3780 is designed to detect p53 protein expression in research applications evaluating tumor biology, DNA damage responses, and cell cycle regulation. As a recombinant monoclonal antibody, clone rTP53/3780 supports consistent detection of TP53 in normal and neoplastic tissues.

Application Notes

1. Optimal dilution of the Cellular Tumor Antigen p53/TP53 antibody should be determined by the researcher.

2. This Cellular Tumor Antigen p53/TP53 antibody is recombinantly produced by expression in human HEK293 cells.

Immunogen

Recombinant human full-length TP53 protein was used as the immunogen for the Cellular Tumor Antigen p53/TP53 antibody.

Storage

Cellular Tumor Antigen p53/TP53 antibody with sodium azide - store at 2 to 8oC; antibody without sodium azide - store at -20 to -80oC.