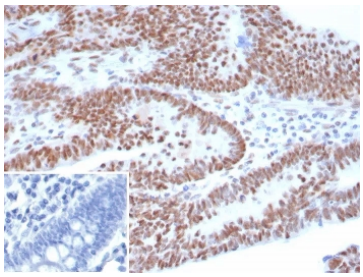
Tumor Protein 53 Antibody / p53 [clone TP53/8183R] (V5803)

Catalog No.	Formulation	Size
V5803-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V5803-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V5803SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

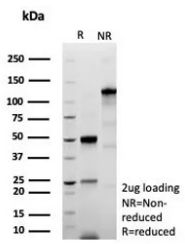
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	TP53/8183R
Purity	Protein A affinity
UniProt	P04637
Localization	Nucleus
Applications	Immunohistochemistry (FFPE): 1-2ug/ml
Limitations	This Tumor Protein 53 antibody is available for research use only.



Immunohistochemistry analysis of Tumor Protein 53 antibody in human ovarian carcinoma tissue (clone TP53/8183R). FFPE ovarian carcinoma sections demonstrate strong HRP-DAB brown nuclear staining in the majority of tumor epithelial cells, consistent with accumulation of p53 protein in neoplastic nuclei. The staining pattern is predominantly nuclear, with minimal cytoplasmic background and low stromal signal. This nuclear localization aligns with the role of Tumor protein 53 as a transcription factor regulating cell cycle and DNA damage responses. The inset image shows the PBS secondary-only negative control, confirming absence of specific staining in the control section. Heat induced epitope retrieval was performed by boiling tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 minutes followed by cooling prior to primary antibody incubation.



SDS-PAGE analysis of purified, BSA-free recombinant Tumor Protein 53 antibody (clone TP53/8183R) as confirmation of integrity and purity.

Description

Tumor protein 53 antibody, also known as p53 antibody, recognizes Tumor protein 53, a sequence specific transcription factor encoded by the TP53 gene and widely regarded as a central tumor suppressor in human cancer biology. Tumor protein 53 is commonly referred to as p53 and functions as a nuclear protein that regulates genes involved in cell cycle arrest, DNA repair, senescence, and apoptosis. Under normal conditions, p53 levels are tightly controlled and maintained at low abundance through MDM2 mediated ubiquitination and proteasomal degradation.

In response to cellular stress such as DNA damage, oncogene activation, hypoxia, or oxidative stress, p53 becomes stabilized and activated through post translational modifications including phosphorylation and acetylation. Activated p53 accumulates in the nucleus and binds to specific DNA response elements to regulate transcription of target genes such as CDKN1A, BAX, and PUMA. Through these downstream effectors, Tumor protein 53 halts cell cycle progression to allow DNA repair or triggers programmed cell death if genomic damage is irreparable. This protective mechanism prevents propagation of genetically unstable cells.

Mutations in TP53 are among the most common genetic alterations in human malignancies. Many tumor associated mutations result in production of a stable but dysfunctional p53 protein that accumulates in the nucleus, making p53 a widely used biomarker in oncology research and diagnostic pathology. In addition to loss of tumor suppressive function, certain mutant forms of p53 may acquire gain of function properties that promote tumor progression, invasion, and resistance to therapy.

Tumor protein 53 is primarily localized to the nucleus, although cytoplasmic staining may be observed depending on cellular context and mutation status. Recombinant Tumor protein 53 antibody clone TP53/8183R is designed to detect p53 protein expression in research applications evaluating tumor biology, DNA damage responses, and cell cycle regulation. As a recombinant rabbit monoclonal antibody, clone TP53/8183R provides consistent performance for studies investigating TP53 expression patterns in normal and neoplastic tissues.

Researchers studying p53 expression and TP53 signaling can explore our Protein Microarray Validated p53 Antibody page for additional reagents targeting this key tumor suppressor in cancer, DNA damage response and cell cycle research.

Application Notes

Optimal dilution of the Tumor Protein 53 antibody should be determined by the researcher.

Immunogen

A recombinant human full-length TP53 protein was used as the immunogen for the Tumor Protein 53 antibody.

Storage

Aliquot the Tumor Protein 53 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

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