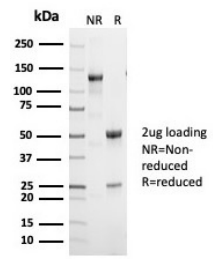
p53 Tumor Suppressor Protein Antibody [clone TP53/7002R] (V5425)

Catalog No.	Formulation	Size
V5425-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V5425-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V5425SAF-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	TP53/7002R
Purity	Protein A/G affinity
UniProt	P04637
Localization	Cytoplasm, Nucleus
Applications	Flow Cytometry : 1-2ug/million cells Immunohistochemistry (FFPE) : 1-2ug/ml
Limitations	This p53 Tumor Suppressor Protein antibody is available for research use only.



SDS-PAGE analysis of purified, BSA-free p53 antibody (clone TP53/7002R) as confirmation of integrity and purity.

Description

p53 Tumor suppressor protein antibody recognizes Tumor protein 53, a nuclear transcription factor encoded by the TP53

gene and widely regarded as one of the most important tumor suppressors in human biology. Tumor protein 53, commonly referred to as p53, functions as a central regulator of genomic stability by controlling genes involved in cell cycle arrest, DNA repair, apoptosis, and senescence. Under basal conditions, p53 protein levels are kept low through MDM2 mediated ubiquitination and proteasomal degradation, allowing normal cell proliferation to proceed.

In response to cellular stress such as DNA damage, oncogene activation, hypoxia, or oxidative injury, p53 becomes stabilized through post translational modifications including phosphorylation and acetylation. Stabilized p53 accumulates in the nucleus and binds sequence specific DNA response elements to activate transcription of target genes including CDKN1A, BAX, and PUMA. Through these downstream pathways, p53 induces cell cycle arrest to permit DNA repair or initiates programmed cell death if the damage is irreparable. This stress responsive checkpoint function prevents propagation of genetically unstable cells and protects against malignant transformation.

Mutations in TP53 are among the most common genetic alterations observed in human cancers. Many tumor associated mutations lead to production of a stable but functionally impaired p53 protein that accumulates in the nucleus. This accumulation often results in strong nuclear staining in tumor tissues, making p53 a widely used biomarker in oncology research and diagnostic studies. In some contexts, mutant p53 proteins may also acquire gain of function properties that contribute to tumor progression, invasion, and resistance to therapy.

Tumor protein 53 is primarily localized to the nucleus, consistent with its role as a transcription factor, although cytoplasmic localization may be observed depending on mutation status and cellular context. The recombinant rabbit monoclonal antibody clone TP53/7002R is designed to detect p53 protein expression in research applications focused on cancer biology, DNA damage signaling, and cell cycle regulation. As a recombinant rabbit monoclonal antibody, clone TP53/7002R provides consistent performance for evaluating TP53 expression patterns in normal and neoplastic tissues.

Application Notes

Optimal dilution of the p53 Tumor Suppressor Protein antibody should be determined by the researcher.

Immunogen

Recombinant human full-length TP53 protein was used as the immunogen for the p53 Tumor Suppressor Protein antibody.

Storage

Aliquot the p53 Tumor Suppressor Protein antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.