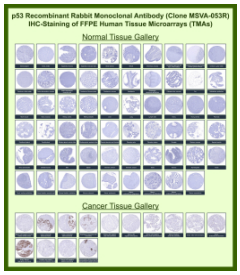
p53 IHC Antibody / TP53 [clone MSVA-053R] (V6124)

Catalog No.	Formulation	Size
V6124-100UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V6124-20UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug

Recombinant RABBIT MONOCLONAL

Bulk quote request

Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	MSVA-053R
UniProt	P04637
Localization	Centrosome, Cytoplasm, Cytoskeleton, Endoplasmic reticulum, Microtubule organizing center, Mitochondrion matrix, Nucleus, PML body
Applications	Immunohistochemistry (FFPE) : 1:100-1:200
Limitations	This p53 IHC antibody is available for research use only.



Immunohistochemistry analysis of p53 IHC antibody in human normal and cancer tissue microarrays (clone MSVA-053R). FFPE tissue microarrays demonstrate predominantly nuclear HRP-DAB brown staining in selected tumor types, consistent with accumulation of Tumor protein 53 in neoplastic cells, while most normal tissues show minimal to weak nuclear signal under physiologic conditions. Strong nuclear staining is observed in subsets of colorectal, breast, ovarian, and other carcinomas, whereas many non-neoplastic tissues display low basal expression. The overall staining distribution across normal and malignant tissues aligns with established TP53 expression patterns and publicly available data from the Human Protein Atlas.

Description

p53 IHC antibody recognizes Tumor protein 53, a nuclear transcription factor encoded by the TP53 gene and widely known as p53, one of the most important tumor suppressors in human cancer biology. Tumor protein 53 plays a central role in maintaining genomic stability by regulating transcriptional programs involved in cell cycle arrest, DNA repair, apoptosis, and senescence. Under normal physiologic conditions, p53 protein levels are tightly controlled through MDM2 mediated ubiquitination and proteasomal degradation, allowing normal cell proliferation and tissue homeostasis.

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 downstream target genes 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 checkpoint function prevents propagation of genetically unstable cells and suppresses tumor development.

Mutations in TP53 are among the most frequent genetic alterations in human malignancies. 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 immunohistochemical staining in neoplastic tissues, making p53 antibody a widely used marker in cancer research and pathology studies. Patterns of nuclear overexpression may correlate with underlying TP53 mutation status in certain tumor types. Because of its diagnostic and research significance, p53 IHC antibody is commonly applied in studies evaluating tumor classification, prognostic assessment, and molecular pathology.

Tumor protein 53 is predominantly localized to the nucleus, consistent with its role as a transcription factor. The recombinant rabbit monoclonal antibody clone MSVA-053R is designed to detect p53 protein expression in immunohistochemistry based research applications. As a recombinant rabbit monoclonal antibody, clone MSVA-053R supports consistent and specific detection of TP53 in formalin fixed, paraffin embedded tissues and other relevant research samples.

Application Notes

1. Optimal dilution of the p53 IHC antibody should be determined by the researcher.

2. This p53 IHC antibody is recombinantly produced by expression in human HEK293 cells.

3. Manual Protocol: Freshly cut sections should be used (less than 10 days between cutting and staining). Heat-induced antigen retrieval for 5 minutes in an autoclave at 121oC in pH 7.8 Target Retrieval Solution buffer. Apply the antibody at a dilution of 1:150 at 37oC for 60 minutes. Visualization of bound antibody by the EnVision Kit (Dako, Agilent) according to the manufacturer's directions.

Immunogen

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

Storage

p53 IHC antibody with sodium azide - store at 2 to 8oC; antibody without sodium azide - store at -20 to -80oC.