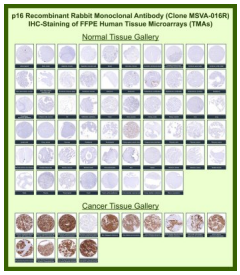
p16 INK4a Antibody for IHC / CDKN2A [clone MSVA-016R] (V6059)

Catalog No.	Formulation	Size
V6059-100UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V6059-20UG	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-016R
UniProt	P42771
Localization	Cytoplasm, Nucleus
Applications	Immunohistochemistry (FFPE): 1:100-1:200
Limitations	This p16 INK4a/CDKN2A antibody is available for research use only.



p16 INK4a Antibody for IHC Tissue Microarray (TMA). Immunohistochemistry analysis of Cyclin-dependent kinase inhibitor 2A CDKN2A, also known as p16 INK4a, in formalin-fixed paraffin-embedded human normal and cancer tissue microarrays using recombinant rabbit monoclonal p16 INK4a antibody clone MSVA-016R. Tissue microarray (TMA) staining with HRP-DAB brown chromogen demonstrates predominantly nuclear localization with accompanying cytoplasmic staining in tumor cells across multiple carcinoma types, consistent with overexpression in settings of RB pathway dysregulation, while most normal tissues show low or focal signal. Within tumor tissue microarrays, strong and diffuse labeling is observed in several malignancies, including squamous cell carcinomas and other high-grade tumors. Evaluation across large TMA panels enables direct comparison of CDKN2A expression across diverse tissue types under standardized conditions. The observed staining patterns align with reported CDKN2A expression profiles in publicly available datasets including the Human Protein Atlas.

Description

p16 INK4a antibody recognizes Cyclin-dependent kinase inhibitor 2A, the tumor suppressor protein encoded by the

CDKN2A gene located on chromosome 9p21.3. p16 INK4a Antibody for IHC is designed for detection of this critical cell cycle regulator in formalin-fixed, paraffin-embedded tissue specimens. The CDKN2A gene product, commonly referred to as p16INK4a, localizes predominantly to the nucleus with additional cytoplasmic distribution and functions as a key inhibitor of CDK4 and CDK6, thereby preventing phosphorylation of the retinoblastoma protein and blocking transition from G1 to S phase.

CDKN2A antibody, also known as p16 antibody and INK4a antibody in the literature, targets a central component of the RB tumor suppressor pathway. The CDKN2A locus is complex and produces multiple distinct proteins through alternative reading frames, including p14ARF, but p16INK4a specifically inhibits cyclin D-CDK4 and cyclin D-CDK6 complexes. Loss of CDKN2A function through mutation, deletion, or promoter methylation is among the most common molecular alterations in melanoma, pancreatic carcinoma, glioma, bladder carcinoma, and many additional malignancies.

In physiologic tissues, p16INK4a expression is generally low in actively cycling cells but increases during cellular senescence or in response to oncogenic stress. Marked overexpression is frequently observed in high-risk human papillomavirus-associated lesions, including cervical intraepithelial neoplasia and carcinoma, where viral oncoproteins inactivate RB and drive compensatory upregulation of p16INK4a. As a result, p16 INK4a antibody is widely used in research evaluating RB pathway dysregulation, viral oncogenesis, and tumor suppressor status in epithelial malignancies.

Structurally, p16INK4a contains ankyrin repeat domains that mediate binding to CDK4 and CDK6. By maintaining RB in a hypophosphorylated, growth-suppressive state, p16INK4a enforces cell cycle arrest and prevents inappropriate S phase entry. Disruption of this regulatory axis contributes directly to uncontrolled proliferation and tumor progression.

The recombinant rabbit monoclonal clone MSVA-016R targets p16INK4a for immunohistochemical detection in research settings. Visualization of nuclear and cytoplasmic staining patterns supports investigation of CDKN2A expression status and assessment of cell cycle checkpoint integrity in tissue-based studies at NSJ Bioreagents.

This antibody is also part of a broader collection of IHC antibodies validated by tissue microarray analysis, supporting consistent staining across normal and cancer tissues.

Application Notes

1. Optimal dilution of the p16 INK4a Antibody for IHC / CDKN2A should be determined by the researcher.

2. This p16 INK4a/CDKN2A 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

Purified recombinant prokaryotic full-length human p16INK4a protein was used as the immunogen for the p16 INK4a antibody for IHC.

Storage

CDKN2A/p14ARF antibody with sodium azide - store at 2 to 8oC; antibody without sodium azide - store at -20 to -80oC.

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