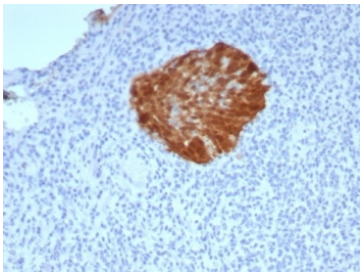
P16INK4a Antibody Rabbit Monoclonal / CDKN2A [clone CDKN2A/7660R] (V5280)

Catalog No.	Formulation	Size
V5280-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V5280-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V5280SAF-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	CDKN2A/7660R
Purity	Protein A/G affinity
UniProt	P42771
Localization	Nucleus, Cytoplasm
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This P16INK4a antibody is available for research use only.



Immunohistochemistry of P16INK4a antibody in human cervical carcinoma tissue. The rabbit monoclonal clone CDKN2A/7660R demonstrates strong nuclear and cytoplasmic HRP-DAB brown staining in a discrete cluster of malignant epithelial cells, consistent with overexpression of Cyclin-dependent kinase inhibitor 2A in RB pathway dysregulation. Surrounding stromal and inflammatory cells show minimal to no specific staining, providing clear contrast with the positive tumor focus. 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 antibody incubation.

Description

P16INK4a antibody recognizes Cyclin-dependent kinase inhibitor 2A, the tumor suppressor protein encoded by the

CDKN2A gene on chromosome 9p21.3. P16INK4a Antibody Rabbit Monoclonal is developed to detect this critical regulator of cell cycle progression in research applications involving normal and neoplastic tissues. P16INK4a functions primarily in the nucleus, with additional cytoplasmic localization, where it binds to CDK4 and CDK6 to inhibit phosphorylation of the retinoblastoma protein and block transition from G1 to S phase.

CDKN2A antibody, also referred to as P16 antibody and INK4a antibody in the literature, targets a key component of the RB pathway. The CDKN2A locus is unique in that it encodes multiple tumor suppressor proteins through alternative splicing and reading frames, including P14ARF, but P16INK4a specifically acts through inhibition of cyclin D-CDK4 and cyclin D-CDK6 complexes. Loss of CDKN2A function through mutation, deletion, or promoter methylation is frequently observed in melanoma, pancreatic carcinoma, glioma, bladder cancer, and other malignancies.

In normal tissues, P16INK4a expression is generally low but can increase in response to cellular senescence or oncogenic stress. Overexpression of P16INK4a is commonly observed in high-risk human papillomavirus-associated lesions, including cervical intraepithelial neoplasia and carcinoma, where viral oncoproteins inactivate RB, leading to compensatory upregulation of P16. As a result, P16INK4a antibody is widely used in studies investigating cell cycle dysregulation, viral oncogenesis, and tumor suppressor pathway alterations.

Structurally, P16INK4a contains multiple ankyrin repeat motifs that mediate its interaction with CDK4 and CDK6. By preventing formation of active cyclin D-CDK complexes, it maintains RB in a hypophosphorylated state, thereby enforcing cell cycle arrest. Disruption of this regulatory axis promotes uncontrolled proliferation and contributes to tumorigenesis.

The rabbit monoclonal clone CDKN2A/7660R provides specific detection of P16INK4a in formalin-fixed tissues and cell-based systems. Visualization of nuclear and cytoplasmic staining patterns supports research into CDKN2A expression status, cell cycle checkpoint integrity, and mechanisms of malignant transformation at NSJ Bioreagents.

Application Notes

Optimal dilution of the P16INK4a antibody rabbit monoclonal should be determined by the researcher.

Immunogen

Purified recombinant prokaryotic full-length human protein was used as the immunogen for the P16INK4a antibody rabbit monoclonal.

Storage

Aliquot the P16INK4a antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.