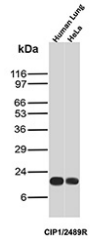
Recombinant p21 Antibody CIP1/2489R / CDKN1A Rabbit Monoclonal Antibody [clone CIP1/2489R] (V7655)

Catalog No.	Formulation	Size
V7655-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V7655-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V7655SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

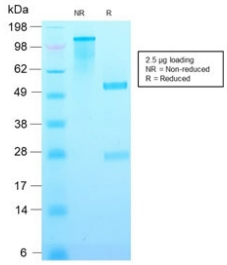
Recombinant RABBIT MONOCLONAL

Bulk quote request

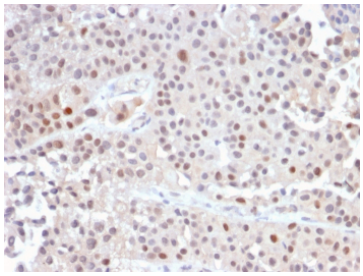
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	CIP1/2489R
Purity	Protein A affinity chromatography
UniProt	P38936
Localization	Nuclear
Applications	Immunohistochemistry (FFPE): 1-2ug/ml Western blot: 2-4ug/ml
Limitations	This Recombinant p21 Antibody CIP1/2489R / CDKN1A Rabbit Monoclonal Antibody is available for research use only.



Recombinant p21 Antibody CIP1/2489R Human Lung and HeLa WB. Western blot analysis of p21 / CDKN1A, also known as p21WAF1, expression in human lung tissue and HeLa cell lysates using p21 antibody clone CIP1/2489R. Lane 1: human lung lysate, Lane 2: HeLa cell lysate. A band is detected at approximately 21-24 kDa, consistent with the predicted molecular weight of p21 (CDKN1A), a key cyclin-dependent kinase inhibitor that regulates cell cycle arrest. Signal is observed in both samples, reflecting p21 expression in tissue and proliferating cells.



SDS-PAGE analysis of purified, BSA-free recombinant p21 antibody (clone CIP1/2489R) as confirmation of integrity and purity.



IHC staining of FFPE human urothelial carcinoma with Recombinant p21 Antibody CIP1/2489R. HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 10-20 min and allow to cool before testing.

Description

Recombinant p21 Antibody CIP1/2489R / CDKN1A Rabbit Monoclonal Antibody recognizes p21, a cyclin-dependent kinase inhibitor encoded by the CDKN1A gene. Also known as WAF1, CIP1, and SDI1, p21 belongs to the CIP/KIP family of cell cycle regulators, alongside p27 and p57. It coordinates cellular proliferation with DNA damage responses, differentiation, and environmental stress by interacting with proteins involved in cell cycle progression and DNA replication. The activity of p21 is regulated through transcriptional mechanisms, post-translational modifications, and controlled protein degradation.

CDKN1A is a major transcriptional target of the tumor suppressor p53. Following DNA damage, activated p53 can increase p21 expression, leading to inhibition of cyclin-dependent kinase activity and restriction of cell cycle progression. This response helps prevent the replication of damaged DNA while repair processes operate. However, CDKN1A expression is also regulated independently of p53 through pathways involving transforming growth factor beta, differentiation signals, and other regulatory proteins. These mechanisms allow p21 to participate in growth control under diverse physiological conditions.

At the molecular level, p21 binds cyclin E-CDK2 and cyclin A-CDK2 complexes, limiting kinase activity required for progression through the G1/S transition and subsequent DNA synthesis. Its interactions with cyclin D-CDK4/6 complexes are more context-dependent, as p21 can facilitate complex assembly while also regulating kinase activity. These interactions help coordinate proliferative signals with checkpoint mechanisms. Sustained p21 expression can contribute to cellular senescence, although additional signaling pathways are involved in establishing and maintaining this growth-arrested state.

Beyond cyclin-dependent kinase inhibition, p21 interacts with proliferating cell nuclear antigen (PCNA), an essential component of DNA replication and repair. This interaction provides another mechanism through which CDKN1A influences DNA synthesis and genome maintenance. The biological functions of p21 also depend on its subcellular localization. Nuclear p21 is primarily associated with cell cycle inhibition, whereas cytoplasmic p21 can influence apoptosis-related signaling and cellular survival. Phosphorylation, ubiquitination, and regulated degradation further affect its stability, localization, and interactions with other proteins.

CDKN1A is widely investigated in cancer biology because alterations in cell cycle checkpoints and DNA damage signaling contribute to tumor development. Depending on cellular context, p21 can suppress proliferation or participate in mechanisms that support survival during stress. NSJ Bioreagents offers this Recombinant p21 Antibody to support investigations into CDKN1A signaling, cellular senescence, DNA damage responses, and the molecular mechanisms governing cell proliferation.

For additional research into CDKN1A-mediated cell cycle regulation and DNA damage responses, explore our p21 Antibody (V2431), featuring clone DCS-60.2.

Application Notes

Optimal dilution of the Recombinant p21 Antibody CIP1/2489R / CDKN1A Rabbit Monoclonal Antibody should be determined by the researcher.

Immunogen

A recombinant full-length human protein was used as the immunogen for the recombinant p21 antibody.

Storage

Store the recombinant p21 antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

CDKN1A antibody, p21 WAF1 antibody, p21 CIP1 antibody, Cyclin-Dependent Kinase Inhibitor 1A antibody, Cyclin-Dependent Kinase Inhibitor p21 antibody

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