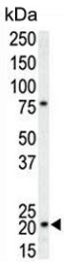
p21 WAF1 Antibody / CDKN1A Polyclonal Antibody (F54937)

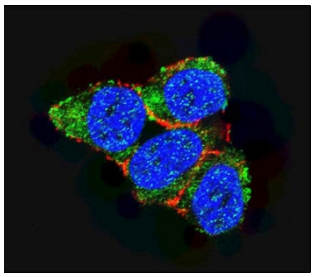
Catalog No.	Formulation	Size
F54937-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F54937-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

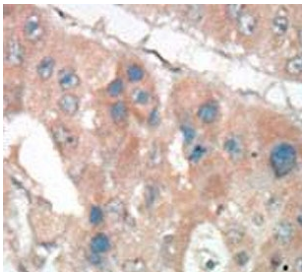
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Purified
UniProt	P38936
Localization	Nuclear, cytoplasmic
Applications	Flow cytometry: 1:25 (1x10e6 cells) Immunofluorescence: 1:25 Immunohistochemistry (FFPE): 1:25 Western blot: 1:500-1:2000
Limitations	This p21 WAF1 Antibody / CDKN1A Polyclonal Antibody is available for research use only.



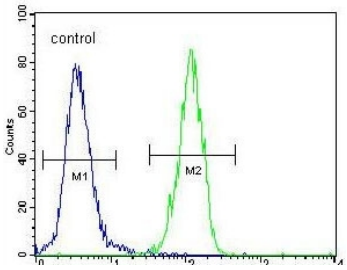
p21 WAF1 Antibody by WB in Human T-47D Cells. Western blot analysis of human T-47D cell lysate using CDKN1A Polyclonal Antibody. The expected position of p21 (CDKN1A) is indicated near 20-21 kDa, consistent with its commonly observed electrophoretic migration. The supplied image does not clearly resolve a distinct immunoreactive band.



p21 WAF1 Antibody by IF in Human HEK293 Cells. Immunofluorescent staining of human HEK293 cells using CDKN1A Polyclonal Antibody (green), an anti-actin antibody (red), and DAPI nuclear counterstain (blue). Green immunoreactivity is predominantly observed in the cytoplasmic and perinuclear regions, while actin staining highlights cytoskeletal structures.



p21 WAF1 Antibody by IHC in Human Cancer Tissue. Immunohistochemical staining of FFPE human cancer tissue using CDKN1A Polyclonal Antibody. Diffuse brown immunoreactivity is observed predominantly in the cytoplasmic regions of tumor cells, with blue hematoxylin nuclear counterstaining. Heat-induced epitope retrieval was performed by steaming in citrate buffer (pH 6) for 20 minutes.



p21 WAF1 Antibody by FACS in Human HEK293 Cells. Flow cytometric analysis of human HEK293 cells using CDKN1A Polyclonal Antibody. The green fluorescence distribution is shifted to the right relative to the blue isotype control, indicating increased antibody-associated fluorescence.

Description

p21 WAF1 Antibody / CDKN1A Polyclonal Antibody targets cyclin-dependent kinase inhibitor 1A, a protein that regulates cell cycle progression and cellular responses to growth signals and stress. Encoded by the CDKN1A gene, p21 is also known as WAF1, CIP1, and SDI1. It belongs to the CIP/KIP family of cyclin-dependent kinase inhibitors, alongside p27 and p57. Unlike proteins that function primarily through enzymatic activity, p21 exerts much of its regulatory influence through direct interactions with cyclin-dependent kinases and other proteins involved in DNA replication and checkpoint control.

CDKN1A is a well-characterized transcriptional target of the tumor suppressor p53. Following DNA damage, p53 can stimulate p21 expression, leading to inhibition of cyclin-CDK activity and restriction of cell cycle progression. This response helps coordinate DNA repair with cellular proliferation. However, p21 expression is also regulated independently of p53 through pathways activated by differentiation signals, growth factors, and environmental stress. Consequently, CDKN1A can influence cell cycle behavior under a broad range of physiological conditions.

At the molecular level, p21 inhibits cyclin E-CDK2 and cyclin A-CDK2 complexes, helping restrict progression through the G1/S transition and subsequent DNA synthesis. Its interactions with cyclin D-associated CDK4 and CDK6 complexes are more complex, as p21 can promote complex assembly while also modulating kinase activity. These context-dependent effects contribute to the coordination of cell cycle progression with changes in cellular signaling. Sustained p21 expression can also participate in the establishment of cellular senescence, although additional pathways are required to maintain this growth-arrested state.

Beyond cyclin-dependent kinase regulation, p21 binds proliferating cell nuclear antigen (PCNA), a protein essential for DNA replication and several DNA repair processes. Through this interaction, p21 can influence replication-associated events independently of its effects on CDKs. Subcellular localization also shapes its biological activity. Nuclear p21 is primarily associated with cell cycle inhibition, whereas cytoplasmic p21 can participate in signaling mechanisms affecting apoptosis and cell survival. Phosphorylation, ubiquitination, and regulated protein degradation further influence p21

stability, localization, and functional interactions.

Altered CDKN1A expression has been documented in numerous cancers, where its biological consequences depend on the cellular environment and the integrity of associated signaling pathways. While p21 frequently contributes to growth suppression, certain contexts reveal functions that support cellular survival during stress. NSJ Bioreagents offers this p21 WAF1 Antibody to support investigations into checkpoint regulation, DNA damage responses, senescence, 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

The stated application concentrations are suggested starting points. Titration of the p21 WAF1 Antibody / CDKN1A Polyclonal Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A portion of amino acids 134-164 from the human protein was used as the immunogen for the p21WAF1 antibody.

Storage

Aliquot the p21WAF1 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

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

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