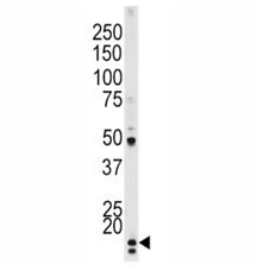
Phospho-p21 T145 Antibody / CDKN1A Phospho-Thr145 Antibody (F48424)

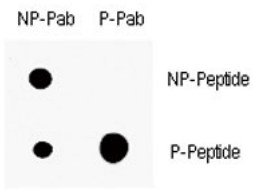
Catalog No.	Formulation	Size
F48424-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F48424-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

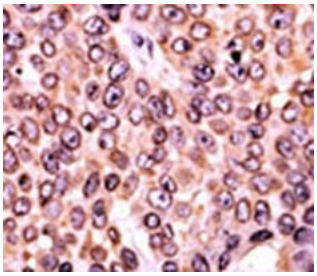
Availability	1-3 business days
Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity
UniProt	P38936
Applications	Western blot: 1:1000 Dot blot: 1:500 IHC (Paraffin): 1:50-1:100
Limitations	This Phospho-p21 T145 Antibody / CDKN1A Phospho-Thr145 Antibody is available for research use only.



Western blot testing of p-p21 antibody and HeLa lysate.



Dot blot analysis of Phospho-p21 T145 Antibody. 50ng of phos-peptide or nonphos-peptide per dot were spotted.



IHC analysis of FFPE human breast carcinoma tissue stained with the p-p21 antibody.

Description

Phospho-p21 T145 Antibody / CDKN1A Phospho-Thr145 Antibody recognizes p21 phosphorylated at threonine 145, a regulatory site involved in cell cycle signaling and protein interactions. Encoded by CDKN1A, p21 is also known as WAF1 and CIP1 and belongs to the CIP/KIP family of cyclin-dependent kinase inhibitors. The protein regulates cellular proliferation through interactions with cyclin-CDK complexes and proliferating cell nuclear antigen (PCNA). Phosphorylation at Thr145 provides an important mechanism through which signaling pathways modify these interactions and influence p21 function.

CDKN1A is a major transcriptional target of the tumor suppressor p53. Following DNA damage, p53 activation can increase p21 expression, leading to inhibition of cyclin-dependent kinase activity and cell cycle arrest. This response helps coordinate DNA repair with cellular proliferation. However, p21 also responds to p53-independent signals, including growth factors and pathways associated with cellular survival. Post-translational modifications allow these signals to influence p21 activity independently of changes in transcription.

Thr145 is a documented phosphorylation target of Akt, also known as protein kinase B. Published studies have demonstrated that Akt-mediated phosphorylation at this residue can reduce the interaction between p21 and PCNA, a protein essential for DNA replication and repair. Phosphorylation can also weaken p21 interactions with CDK2 and CDK4, reducing its inhibitory activity toward CDK2 under certain experimental conditions. These findings establish Thr145 as a functionally significant site linking PI3K-Akt signaling to cell cycle regulation.

Phosphorylation at Thr145 has also been associated with changes in p21 subcellular localization. Research involving HER2-overexpressing cancer cells demonstrated Akt-dependent phosphorylation accompanied by increased cytoplasmic p21 accumulation. However, studies in endothelial cells and other experimental systems have reported different localization outcomes. Consequently, Thr145 phosphorylation should not be considered an exclusively cytoplasmic signal. Its effects depend on cellular context, kinase activity, and additional regulatory mechanisms.

Altered PI3K-Akt signaling is frequently investigated in cancer biology because it influences proliferation, survival, and responses to cellular stress. Phosphorylation-dependent regulation of p21 may contribute to these processes by modifying its interactions with proteins controlling DNA synthesis and cell cycle progression. NSJ Bioreagents offers this Phospho-p21 T145 Antibody to support investigations into CDKN1A phosphorylation, Akt signaling, and the mechanisms connecting growth regulation with cellular survival.

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

Titration of the Phospho-p21 T145 Antibody / CDKN1A Phospho-Thr145 Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

This p-p21 antibody was produced from rabbits immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding pT145 of human P21CIP1.

Storage

Aliquot the p-p21 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

Phospho-CDKN1A Thr145 antibody, p21 CIP1 pT145 antibody, p21 WAF1 pT145 antibody, Phosphorylated p21 Thr145 antibody

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