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Phospho-CHK1 (Ser286) Polyclonal Antibody

Catalog Number PA5-36795

Product Data Sheet

Details	
Size	100 µl
Host / Isotype	Rabbit IgG
Class	Polyclonal
Type	Antibody
Immunogen	Synthetic phosphopeptide derived from human Chk1 around the phosphorylation site of Serine 286
Conjugate	Unconjugated
Form	Liquid
Concentration	1mg/mL
Purification	Antigen affinity chromatography
Storage Buffer	PBS, pH 7.2
Contains	0.05% sodium azide
Storage Conditions	Store at 4°C short term. For long term storage, store at -20°C, avoiding freeze/thaw cycles.

Species Reactivity	
Tested species reactivity	Human, Mouse, Rat
Tested Applications	**Dilution ***
Western Blot (WB)	1:500-1:1000

* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.

Product Specific Information

This antibody detects endogenous protein at a molecular weight of 56 kDa.

Purity is >95% by SDS-PAGE.

Background/Target Information

CHK1 (CHEK1) is a kinase that phosphorylates cdc25, an important phosphatase in cell cycle control, particularly for entry into mitosis. CHK1 can also phosphorylate p53 at Ser20 in vitro. Cell cycle events are regulated by the sequential activation and deactivation of cyclin dependent kinases (Cdks) and by proteolysis of cyclins. CHK1 is involved in these processes as regulators of Cdks. CHK1 function as an essential component in the G2 DNA damage checkpoint by phosphorylating Cdc25C in response to DNA damage. Phosphorylation inhibits Cdc25C activity, thereby blocking mitosis. Cdc25A, Cdc25B and Cdc25C protein tyrosine phosphatases function as mitotic activators by dephosphorylating Cdc2 p34 on regulatory tyrosine residues. CHK1 can phosphorylate Wee 1 in vitro, providing evidence that the hyperphosphorylated form of Wee 1, seen in cells delayed by CHK1 overexpression, is due to phosphorylation by CHK1. CHK1 is phosphorylated on Serine 345 (S345) in response to UV, IR and hydroxyurea (HU). CHK1 plays an essential role in the mammalian DNA damage checkpoint, embryonic development and tumor suppression. Further, CHK1 is a key mediator in the DNA damage-induced checkpoint network. CHK1 is an evolutionarily conserved protein kinase that functions to ensure genomic integrity upon genotoxic stress. When the G2 or S checkpoint is abrogated by the inhibition of CHK1, p53-deficient cancer cells undergo mitotic catastrophe and eventually apoptosis, whereas normal cells are still arrested in the G1 phase. Thus, CHK1 inhibitors can preferentially potentiate the efficacy of DNA damaging agents in cancer cells, and Chk1 is an attractive therapeutic target for cancer treatment, especially since approximately 50% of all human cancers are p53-deficient.

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