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PLK3 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8044b

Product Information

Application	WB, E
Primary Accession	Q9H4B4
Other Accession	Q9R011
Reactivity	Human, Rat, Mouse
Predicted	Rat, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	71629
Antigen Region	615-646

Additional Information

Gene ID	1263
Other Names	Serine/threonine-protein kinase PLK3, Cytokine-inducible serine/threonine-protein kinase, FGF-inducible kinase, Polo-like kinase 3, PLK-3, Proliferation-related kinase, PLK3, CNK, FNK, PRK
Target/Specificity	This PLK3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 615-646 amino acids from the C-terminal region of human PLK3.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PLK3 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PLK3
Synonyms	CNK, FNK, PRK

Function	Serine/threonine-protein kinase involved in cell cycle regulation, response to stress and Golgi disassembly. Polo-like kinases act by binding and phosphorylating proteins that are already phosphorylated on a specific motif recognized by the POLO box domains. Phosphorylates ATF2, BCL2L1, CDC25A, CDC25C, CHEK2, HIF1A, JUN, p53/TP53, p73/TP73, PTEN, TOP2A and VRK1. Involved in cell cycle regulation: required for entry into S phase and cytokinesis. Phosphorylates BCL2L1, leading to regulate the G2 checkpoint and progression to cytokinesis during mitosis. Plays a key role in response to stress: rapidly activated upon stress stimulation, such as ionizing radiation, reactive oxygen species (ROS), hyperosmotic stress, UV irradiation and hypoxia. Involved in DNA damage response and G1/S transition checkpoint by phosphorylating CDC25A, p53/TP53 and p73/TP73. Phosphorylates p53/TP53 in response to reactive oxygen species (ROS), thereby promoting p53/TP53-mediated apoptosis. Phosphorylates CHEK2 in response to DNA damage, promoting the G2/M transition checkpoint. Phosphorylates the transcription factor p73/TP73 in response to DNA damage, leading to inhibit p73/TP73-mediated transcriptional activation and pro-apoptotic functions. Phosphorylates HIF1A and JUN is response to hypoxia. Phosphorylates ATF2 following hyperosmotic stress in corneal epithelium. Also involved in Golgi disassembly during the cell cycle: part of a MEK1/MAP2K1-dependent pathway that induces Golgi fragmentation during mitosis by mediating phosphorylation of VRK1. May participate in endomitotic cell cycle, a form of mitosis in which both karyokinesis and cytokinesis are interrupted and is a hallmark of megakaryocyte differentiation, via its interaction with CIB1.
Cellular Location	Cytoplasm. Nucleus. Nucleus, nucleolus. Golgi apparatus. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Note=Translocates to the nucleus upon cisplatin treatment Localizes to the Golgi apparatus during interphase. According to a report, PLK3 localizes only in the nucleolus and not in the centrosome, or in any other location in the cytoplasm (PubMed:17264206). The discrepancies in results may be explained by the PLK3 antibody specificity, by cell line-specific expression or post-translational modifications.
Tissue Location	Transcripts are highly detected in placenta, lung, followed by skeletal muscle, heart, pancreas, ovaries and kidney and weakly detected in liver and brain. May have a short half-live. In cells of hematopoietic origin, strongly and exclusively detected in terminally differentiated macrophages. Transcript expression appears to be down-regulated in primary lung tumor

Background

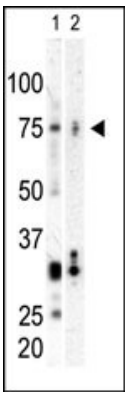
CNK, a member of the CDC5/Polo subfamily of Ser/Thr protein kinases, is involved in regulating M phase functions during the cell cycle. It may also be part of the signaling network controlling cellular adhesion. In vitro, is able to phosphorylate CDC25C and casein. This membrane-associated protein binds to the calcium/integrin-binding protein (CIB). This interaction probably occurs via the POLO-box domain. Transcripts are highly detected in placenta, lung, followed by skeletal muscle, heart, pancreas, ovaries and kidney and weakly detected in liver and brain. This protein exhibits a short half-live. In cells of hematopoietic origin, CNK is strongly and exclusively detected in terminally differentiated macrophages. Transcript expression appears to be down-regulated in primary lung tumor. Cytokine and cellular adhesion trigger CNK induction. CNK is thought to be phosphorylated as cells enter mitosis and dephosphorylated as cells exit mitosis The protein contains 2 POLO box domains.

References

Holtrich, U., et al., Oncogene 19(42):4832-4839 (2000).
Ouyang, B., et al., Oncogene 18(44):6029-6036 (1999).
Ouyang, B., et al., J. Biol. Chem. 272(45):28646-28651 (1997).

Li, B., et al., J. Biol. Chem. 271(32):19402-19408 (1996).

Images



Western blot analysis of anti-CNK Pab (Cat. #AP8044b) in SK-BR3 cell lysate (Lane A) and mouse heart tissue lysate (Lane B). CNK (arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.

Citations

- Phosphorylation of PLK3 Is Controlled by Protein Phosphatase 6
- B23/nucleophosmin serine 4 phosphorylation mediates mitotic functions of polo-like kinase 1.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.