

Recombinant human PLK1 protein ab51426

1 References 5 Images

Description

Product name	Recombinant human PLK1 protein
Biological activity	Specific activity 17nmol/min/mg.
Purity	> 70 % Affinity purified. Purified by affinity chromatography
Expression system	Baculovirus infected Sf9 cells
Accession	P53350
Protein length	Full length protein
Animal free	No
Nature	Recombinant
Species	Human
Sequence	MSAAVTAGKL ARAPADPGKA GVPGVAAPGA PAAAPPAKEI PEVLVDPRSR RRYVRGRFLG KGGFAKCFEI SDADTKEVFA GKIVPKSLLL KPHQREKMSM EISIHRS LAH QHVVG FHGFF EDNDFV FVVL ELCRRRS LLE LHKRRKALTE PEARYYLRQI VLGCQYLHRN RVIHRDLKLG NLFLNEDLEV KIGDFGLATK VEYDGERKKT LCGTPNYAP EVLSKKGHSF EVDVWSIGCI MYTLLVGKPP FETSCLKETY LRIKKNEYSI PKHINPVAAS LIQKMLQTD TARPTINELL NDEFFTSGYI PARLPITCLT IPPRFSIAPS SLDPSNRKPL TVLNKGLENP LPERPREKEE PVVRETGEVV DCHLSDMLQQ LHSV NASKPS ERGLVRQEEA EDPACIPIFW VSKWVDYSDK YGLGYQLCDN SVGVLFNDST RLILYNDGDS LQYIERDGTE SYLTVSSHPN SLMKKITLLK YFRNYMSEHL LKAGANITPR EGDELARLPY LRTWFRTRSA IILHLSNGSV QINFFQDHTK LILCPLMAAV TYDEKRDFR TYRLSLLEEY GCCKELASRL RYARTMVDKL LSSRSASNRL KAS
Predicted molecular weight	70 kDa
Amino acids	1 to 603
Tags	His tag N-Terminus

Specifications

Our **Abpromise guarantee** covers the use of **ab51426** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Applications	Western blot
	Functional Studies
	SDS-PAGE
	Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections)
Form	Liquid
Additional notes	ab91090 (Cow Casein full length protein) can be utilized as a substrate for assessing Kinase activity

Preparation and Storage

Stability and Storage	<p>Shipped on dry ice. Upon delivery aliquot and store at -80°C. Avoid freeze / thaw cycles.</p> <p>pH: 7.00</p> <p>Constituents: 0.00174% PMSF, 0.82% Sodium phosphate, 0.00308% DTT, 25% Glycerol (glycerin, glycerine), 1.74% Sodium chloride</p> <p>This product is an active protein and may elicit a biological response in vivo, handle with caution.</p>
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General Info

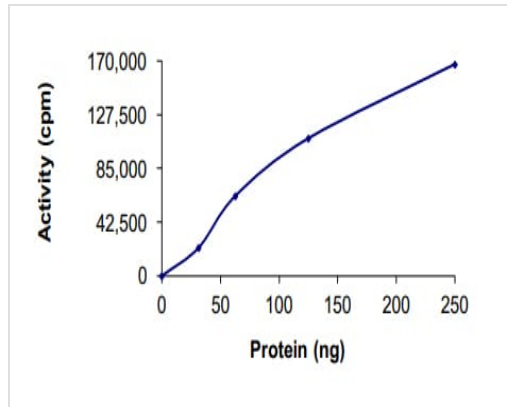
Function	<p>Serine/threonine-protein kinase that performs several important functions throughout M phase of the cell cycle, including the regulation of centrosome maturation and spindle assembly, the removal of cohesins from chromosome arms, the inactivation of APC/C inhibitors, and the regulation of mitotic exit and cytokinesis. Required for recovery after DNA damage checkpoint and entry into mitosis. Required for kinetochore localization of BUB1B. Phosphorylates SGOL1. Required for spindle pole localization of isoform 3 of SGOL1 and plays a role in regulating its centriole cohesion function. Phosphorylates BORA, and thereby promotes the degradation of BORA. Contributes to the regulation of AURKA function. Regulates TP53 stability through phosphorylation of TOPORS.</p>
Tissue specificity	Placenta and colon.
Sequence similarities	<p>Belongs to the protein kinase superfamily. Ser/Thr protein kinase family. CDC5/Polo subfamily. Contains 2 POLO box domains.</p> <p>Contains 1 protein kinase domain.</p>
Developmental stage	Accumulates to a maximum during the G2 and M phases, declines to a nearly undetectable level following mitosis and throughout G1 phase, and then begins to accumulate again during S phase.
Post-translational modifications	<p>Catalytic activity is enhanced by phosphorylation of Thr-210. Phosphorylation at Thr-210 is first detected on centrosomes in the G2 phase of the cell cycle, peaks in prometaphase and gradually disappears from centrosomes during anaphase.</p> <p>Autophosphorylation and phosphorylation of Ser-137 may not be significant for the activation of PLK1 during mitosis, but may enhance catalytic activity during recovery after DNA damage checkpoint.</p> <p>Ubiquitinated by the anaphase promoting complex/cyclosome (APC/C) in anaphase and following DNA damage, leading to its degradation by the proteasome. Ubiquitination is mediated via its interaction with FZR1/CDH1. Ubiquitination and subsequent degradation prevents entry into</p>

mitosis and is essential to maintain an efficient G2 DNA damage checkpoint.

Cellular localization

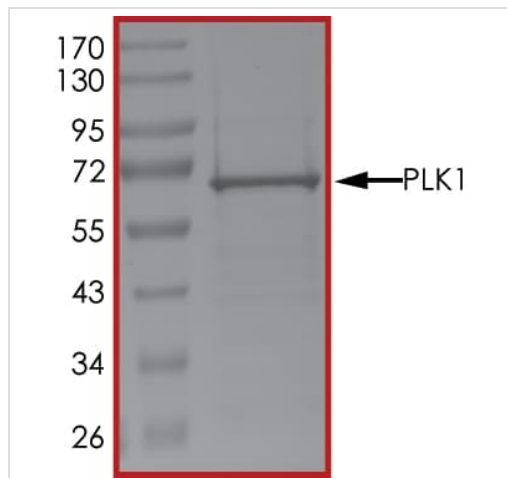
Nucleus. Chromosome > centromere > kinetochore. Cytoplasm > cytoskeleton > centrosome. During early stages of mitosis, the phosphorylated form is detected on centrosomes and kinetochores. Localizes to the outer kinetochore. Presence of SGOL1 and interaction with the phosphorylated form of BUB1 is required for the kinetochore localization.

Images



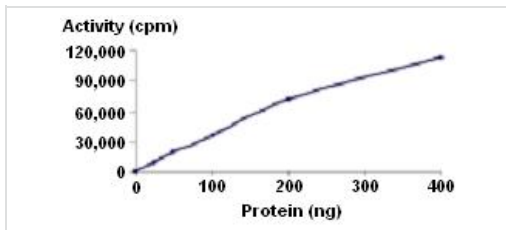
The specific activity of PLK1 (ab51426) was determined to be 16.5 nmol/min/mg as per activity assay protocol

Functional Studies - Recombinant human PLK1 protein (ab51426)



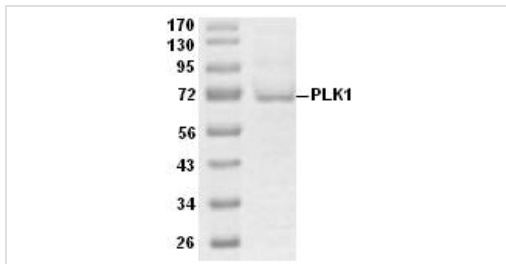
SDS PAGE analysis of ab51426

SDS-PAGE - Recombinant human PLK1 protein (ab51426)



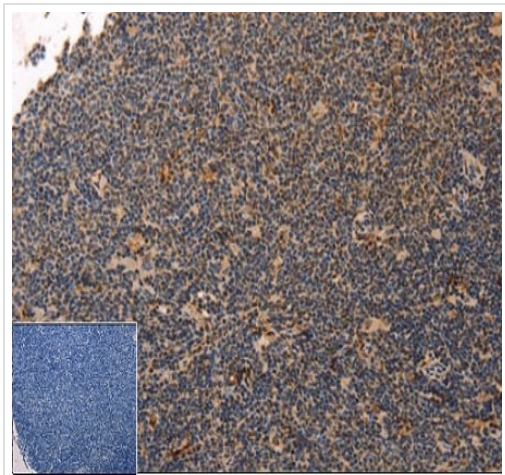
Kinase activity assay. Specific activity 17 nmol/min/mg.

Functional Studies - Recombinant human PLK1 protein (ab51426)



Recombinant human PLK1 protein (His tagged). Molecular weight 70 kDa.

SDS-PAGE - Recombinant human PLK1 protein (ab51426)



Immunohistochemistry of Human Lymphoma tissue staining PLK1 with ab51426 at 1/40. Control is treated with fusion protein.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Recombinant human PLK1 protein (ab51426)

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