

## Anti-Polo-like Kinase (Plk1) pT210 (RABBIT) Antibody - 600-401-446

**Code:** 600-401-446

**Size:** 100 µg

**Product Description:** Anti-Polo-like Kinase (Plk1) pT210 (RABBIT) Antibody - 600-401-446

**Concentration:** 1.0 mg/mL by UV absorbance at 280 nm

**PhysicalState:** Liquid (sterile filtered)

<b>Label</b>	Unconjugated
<b>Host</b>	Rabbit
<b>Gene Name</b>	PLK1
<b>Species Reactivity</b>	human
<b>Buffer</b>	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
<b>Stabilizer</b>	None
<b>Preservative</b>	0.01% (w/v) Sodium Azide
<b>Storage Condition</b>	Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.
<b>Synonyms</b>	PLK 1 antibody, PLK antibody, polio like kinase antibody, Polo like kinase 1 antibody, Polo-like kinase 1 antibody, Serine/threonine protein kinase 13 antibody
<b>Application Note</b>	This affinity-purified antibody has been tested for use in ELISA, IHC and by western blot. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 68 kDa in size corresponding to Plk-1 by western blotting in the appropriate cell lysate or extract. This antibody is positive by IHC on kidney, liver, cancer, thyroid and lymphocyte tissue.
<b>Background</b>	Polo-like Kinase pT210 Antibody detects phosphorylated Plk1 protein. Polo-like kinase 1, also known as Plk-1, serine-threonine protein kinase 13 and STPK13, may be required for cell division and have a role during G <sub>1</sub> or S phase and is associated with the phosphorylation of cyclin B <sub>1</sub> . Phosphorylation of Plk-1 on T210 contributes to proper mitotic progression. Plk-1 has a nuclear localization and accumulates to a maximum during the G <sub>2</sub> and M phases, declines to a nearly undetectable level following mitosis and throughout G <sub>1</sub> phase, and then begins to accumulate again during S phase. Plk-1 is a member of the Ser/Thr protein kinase family and the CDC5/Polo subfamily and contains 2 POLO box domains.
<b>Purity And Specificity</b>	Anti-Polo-like Kinase pT210 Antibody is directed against human phosphorylated Plk1 protein. This antibody was affinity purified. This antibody is specific for phosphorylated human Plk-1 protein at the pT210 residue. BLAST analysis indicates 100 % homology of the immunizing sequence with Plk-1 homologues from human, chimpanzee, pig, chicken, mouse, rat, Xenopus, dog, mosquito, zebra fish, starfish, sea urchin and fruit fly. Cross reactivity with Plk-1 protein homologues from C. elegans and honeybee may also occur as sequence homology varies by one amino acid residue in this sequence. Reactivity with Plk-1 protein from other sources is not known. Minimal reactivity is expected with the non-phosphorylated form of the protein.
<b>Assay Dilutions</b>	User Optimized
<b>ELISA</b>	1:3,000 - 1:12,000
<b>Immunohistochemistry</b>	1:200 - 1:1,000
<b>WESTERN BLOT</b>	1:200 - 1:2,000
<b>IHC</b>	1:200 - 1:1,000
<b>OTHER ASSAYS</b>	User Optimized
<b>Immunogen</b>	Anti-Polo-like Kinase pT210 Antibody was produced by repeated immunizations with a synthetic phospho peptide corresponding to aa 205-214 of Human Polo-like kinase 1 (Plk1) protein.
<b>General Reference</b>	van Vugt, M.A., Br and Medema, R.H. (2004) Polo-like kinase-1 controls recovery from a G2 DNA damage-induced arrest in mammalian cells. <i>Mol. Cell</i> 15 (5), 799-811.  van Vugt, M.A. et al. (2004) Polo-like kinase-1 is required for bipolar spindle formation but is dispensable for anaphase promoting complex/Cdc20 activation and initiation of cytokinesis. <i>J. Biol. Chem.</i> 279 (35), 36841-36854.  Weichert, W., Schmidt, M., Gekeler, V., Denkert, C., Stephan, C., Jung, K., Loening, S., Dietel, M. and Kristiansen, G.

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Ando,K., Ozaki,T., Yamamoto,H., Furuya,K., Hosoda,M., Hayashi,S., Fukuzawa,M. and Nakagawara,A. (2004) Polo-like kinase 1 (Plk1) inhibits p53 function by physical interaction and phosphorylation. *J. Biol. Chem.* 279 (24), 25549-25561.

Litvak,V., Argov,R., Dahan,N., Ramachandran,S., Amarilio,R., Shainskaya,A. and Lev,S. (2004) Mitotic phosphorylation of the peripheral Golgi protein Nir2 by Cdk1 provides a docking mechanism for Plk1 and affects cytokinesis completion. *Mol. Cell* 14 (3), 319-330.

#### Related Products

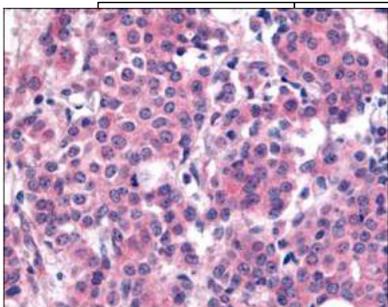
100-401-160	Anti-cdc2 (p34) (RABBIT) Antibody - 100-401-160
100-401-A17	Anti-CDC20 (fizzy) (C-terminal specific) [RABBIT] Antibody - 100-401-A17
200-301-160	Anti-cdc2 (p34) (MOUSE) Monoclonal Antibody - 200-301-160
600-401-465	Anti-Aurora B (pan reactive) (RABBIT) Antibody - 600-401-465

#### Related Links

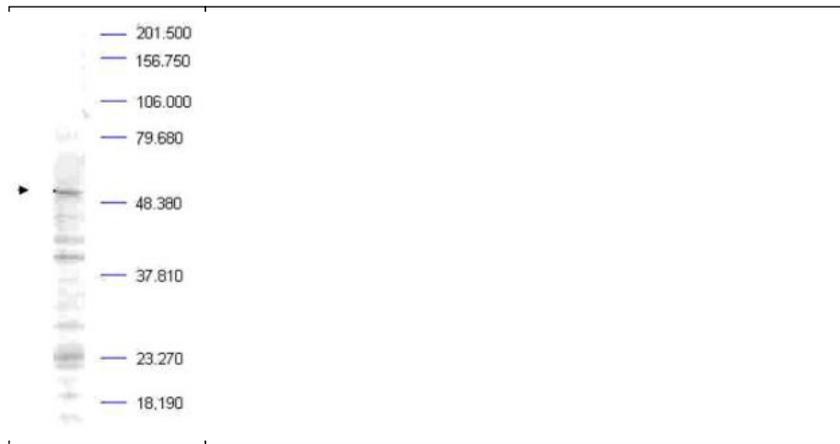
UniProtKB	<a href="http://www.uniprot.org/uniprot/P53350">http://www.uniprot.org/uniprot/P53350</a>
NCBI	<a href="http://www.ncbi.nlm.nih.gov/protein/21359873">http://www.ncbi.nlm.nih.gov/protein/21359873</a>
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UniProt - P53350	<a href="http://www.uniprot.org/uniprot/P53350">http://www.uniprot.org/uniprot/P53350</a>
Gene ID - 5347	<a href="http://www.ncbi.nlm.nih.gov/gene/5347">http://www.ncbi.nlm.nih.gov/gene/5347</a>

#### Images

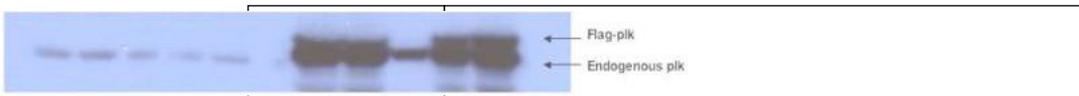
- 1 Affinity Purified Plk1 pT210 was used at a 1:200 dilution to detect Plk1 by immunohistochemistry in human breast carcinoma tumor tissue. Tissue was formalin-fixed and paraffin embedded. Personal Communication, Alan Yen, LifeSpanBiosciences, Seattle, WA.



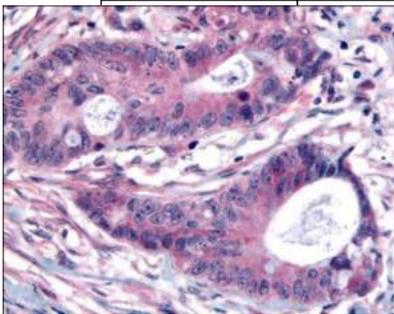
- 2 Western blot analysis is shown using Rockland's Affinity Purified anti-Plk-1 pT210 antibody to detect endogenous protein present in a Mouse A20 whole cell lysate (arrowhead). Comparison to a molecular weight marker indicates a band of ~68 kDa corresponding to Plk-1 protein. It is suggested to use a nuclear extract from synchronized cells to greatly increase the abundance of this protein in preparations. The blot was incubated with a 1:500 dilution of the antibody at room temperature followed by detection using standard techniques. Personal communication Steven Pelech, Kinexus Inc. Vancouver, BC. Storage Conditions: Store vial at -20° C prior to opening. Dilute only prior to immediate use. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Expiration date is one (1) year from date of opening.



3 Western blot analysis is shown to detect endogenous and recombinant protein present in HeLa cell lysates transfected with various plk-1 mutation constructs. Blots were reacted with anti-Plk-1 pT210 (panel A) and pan reactive anti-Plk-1 (panel B). Transfected cells were treated with 1  $\mu$ M nocodazole followed by cell collection, lysate preparation, SDS-PAGE and western blotting. Using a 1:1000 dilution, anti-Plk-1 pT210 detects a single band corresponding to endogenous plk-1, but does not detect recombinant forms of the protein presumably because of a lack of phosphorylation in these mutants. Personal communication Hai Jiang, Northwestern Univ.



4 Affinity Purified Plk1 pT210 was used at a 1:200 dilution to detect Plk1 by immunohistochemistry in human colon carcinoma tumor tissue. Tissue was formalin-fixed and paraffin embedded. Personal Communication, Alan Yen, LifeSpanBiosciences, Seattle, WA.



### Disclaimer

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