


Product datasheet

Anti-PLK1 antibody [36-298] - BSA and Azide free ab178666

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Overview

Product name	Anti-PLK1 antibody [36-298] - BSA and Azide free
Description	Mouse monoclonal [36-298] to PLK1 - BSA and Azide free
Host species	Mouse
Tested applications	Suitable for: ICC, Flow Cyt (Intra), WB
Species reactivity	Reacts with: Mouse, Human, Recombinant fragment Predicted to work with: Rat 
Immunogen	Recombinant full length protein corresponding to Human PLK1.
Epitope	aa330-370.
Positive control	Flow Cyt (Intra): U2OS cells. ICC: HeLa cells.
General notes	<p>This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com.</p> <p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As</p>

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.40 Constituent: PBS
Carrier free	Yes
Purity	IgG fraction

Clonality	Monoclonal
Clone number	36-298
Isotype	IgG1

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab178666 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
ICC		Use at an assay dependent concentration.
Flow Cyt (Intra)		Use 1 µg for 10 ⁶ cells. ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.
WB		Use a concentration of 1 µg/ml. Detects a band of approximately 66 kDa (predicted molecular weight: 68 kDa).

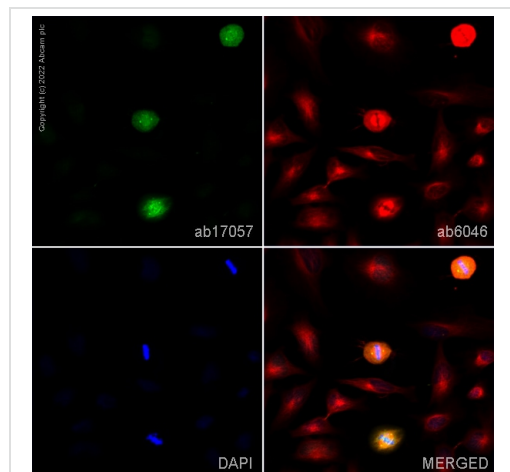
Target

Function	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.
Tissue specificity	Placenta and colon.
Sequence similarities	Belongs to the protein kinase superfamily. Ser/Thr protein kinase family. CDC5/Polo subfamily. Contains 2 POLO box domains. Contains 1 protein kinase domain.
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	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. 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. 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 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

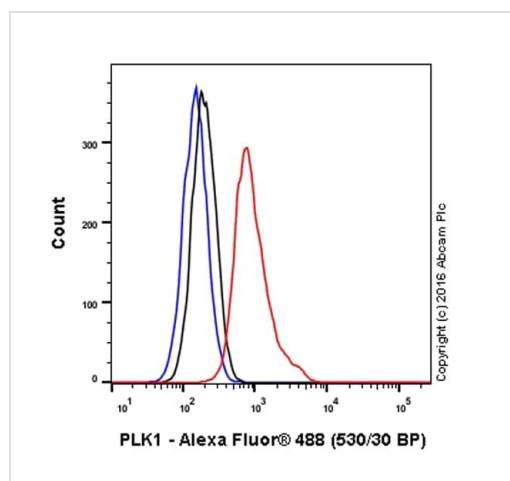


Immunocytochemistry - Anti-PLK1 antibody [36-298]
- BSA and Azide free (ab178666)

This data was developed using the same antibody clone in a different buffer formulation containing PBS and sodium azide (**ab17057**).

ab17057 staining PLK1 in HeLa cells. The cells were fixed with 4% paraformaldehyde (10 min), permeabilized with 0.1% PBS-Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at 4°C with **ab17057** at 1 µg/ml and **ab6046**, Rabbit polyclonal to beta Tubulin - Loading Control. Cells were then incubated with **ab150117**, Goat polyclonal Secondary Antibody to Mouse IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (shown in green) and **ab150080**, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 594) at 1/1000 dilution (shown in pseudocolour red). Nuclear DNA was labelled with DAPI (shown in blue).

Image was acquired with a confocal microscope (Leica-Microsystems TCS SP8) and a single confocal section is shown.



Flow Cytometry (Intracellular) - Anti-PLK1 antibody
[36-298] - BSA and Azide free (ab178666)

This flow cytometry data was generated using the same antibody clone in a different buffer formulation (**ab17057**).

Overlay histogram showing U2OS cells stained with **ab17057** (red line). The cells were fixed with 80% methanol (10 min) and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS / 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (**ab17057**, 1 µg/1x10⁶ cells) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-mouse IgG (H+L) (**ab150117**) at 1/2000 dilution for 30 min at 22°C.

Isotype control antibody (black line) was mouse IgG1 [15-6E10A7] (**ab170190**, 1 µg/1x10⁶ cells) used under the same conditions.

Acquisition of >5,000 events were collected using a 50 mW Blue laser (488nm) and 530/30 bandpass filter.

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