Purified anti-PLK-1 Antibody

Catalog# / Size	627701 / 25 µg 627702 / 100 µg
Clone	3F8
Regulatory Status	RUO
Other Names	Serine/Threonine protein kinase PLK, Polo-like kinase (PLK), Serine-threonine protein kinase 13
Isotype	Mouse IgG1, κ
Description	PLK-1 (polo-like kinase 1) is a member of te serine/threonine protein kinase family, cdc5/polo subfamily. Highly homologous to polo-like kinase (Drosophila), PLK-1 contains two polo box domains with a predicted molecular weight of 68 kD. This nuclear protein is highly expressed in placenta and colon and has been shown to regulate cdc2/cyclin B through phosphorylation and activation of cdc25c phosphatase. PLK-1 may also be required for cell division; depletion of PLK-1 results in apoptosis. PLK-1 is upregulated by growth stimulating agents and is regulated by cell cycle position (highest in G2/M phase, declining to nearly undetectable levels after mitosis and throughout G1). PLK-1 is modified by phosphorylation (Thr210 is the major phosphorylation site in activated PLK-1 from mitotic cells) and has been shown to interact with nuclear distribution gene C. The 3F8 monoclonal antibody recognizes human and mouse PLK-1 and has been shown to be useful for Western blotting.

Product Details

Verified Reactivity	Human, Mouse
Antibody Type	Monoclonal
Host Species	Mouse
Immunogen	Amino Acid: 300-603 of human PLK-1
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography.
Concentration	0.5 mg/ml
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C.
Application	WB - *Quality tested* KO/KD-WB - *Verified* IP, ICC - *Reported in the literature, not verified in house*
Recommended Usage	Each lot of this antibody is quality control tested by Western blotting. Western blotting, suggested working dilution(s): Use 1.0 - 5.0 µg (1:100-1:500) antibody per 5 ml antibody dilution buffer for each mini-gel. It is recommended that the reagent be titrated for optimal performance for each application.
Product Citations	1. Rajamanickam S, *et al.* 2016. Clin Cancer Res. 22: 3524 - 3536. PubMed
RRID	AB_439756 (BioLegend Cat. No. 627701) AB_439757 (BioLegend Cat. No. 627702)

Antigen Details

Structure	Serine/Threonine family of protein kinases, cdc5/polo subfamily. Highly homologous to polo-like kinase (Drosophila). Contains two polo box domains. Predicted molecular weight 68 kD
Distribution	Nuclear protein, highly expressed in placenta and colon

Function	Regulates cdc2/cyclin B through phosphorylation and activation of cdc25c phosphatase. May be required for cell division. Depletion of PLK-1 results in apoptosis
Interaction	Interacts with nuclear distribution gene C
Modification	Phosphorylation
Biology Area	Cell Biology, Cell Cycle/DNA Replication, Signal Transduction
Molecular Family	Protein Kinases/Phosphatase
Antigen References	1. Hamanaka R, *et al.* 1994. *Cell Growth Differ.* 5:249. 2. Lake RJ, *et al.* 1993. *Mol. Cell. Biol.* 13:7793. 3. Holtrich U, *et al.* 1994. *P. Natl. Acad. Sci. USA* 91:1736.
Regulation	Upregulated by growth stimulating agents. Regulated by cell cycle position (highest in G2/M phase and declines to nearly undetectable levels after mitosis and throughout G1)
Gene ID	5347

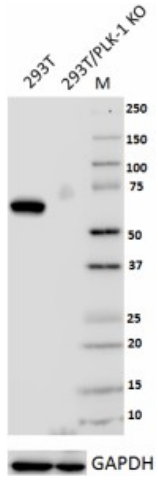
Related Protocols

Western Blotting Protocol

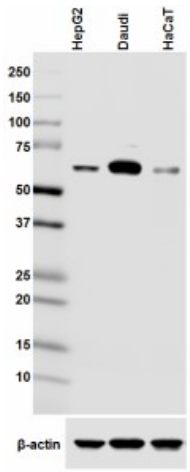
Other Formats

Purified anti-PLK-1

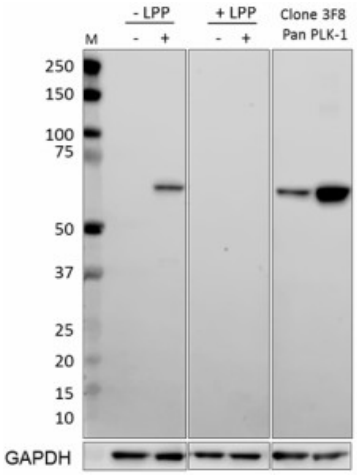
Product Data



Total lysates (15 µg protein) from 293T and 293T/PLK-1 CRISPR/Cas9 knockout (KO) cells were resolved by electrophoresis (4-20% Tris-Glycine gel), transferred to nitrocellulose, and probed with 1:500 diluted (1 µg/mL) purified PLK-1 antibody, clone 3F8 (upper). Proteins were visualized by chemiluminescence detection using a 1:3000 diluted goat anti-mouse-IgG secondary antibody conjugated to HRP (Cat. No. 405306). 1:2000 dilution of Direct-Blot™ HRP anti-GAPDH Antibody (Cat. No. 649203) was used as a loading control (lower). Lane M: MW ladder.



Total lysates (15 µg protein) from HepG2, Daudi and HaCaT were resolved by electrophoresis (4-12% Bis-Tris gel), transferred to nitrocellulose, and probed with 1 µg/ml purified anti-PLK1 antibody, clone 3F8. Proteins were visualized using chemiluminescence detection by incubation with and HRP Goat anti-Mouse secondary antibody (Cat. No. 405306, 1:3000 dilution). Direct-Blot™ HRP anti-β-actin antibody was used as a loading control (Cat. No. 664804, 1:25,000 dilution).



Whole cell extracts (15 µg protein) from serum starved HeLa untreated (-) or treated (+) with 200 ng/mL of Nocodazole for 20 hours were resolved on a 4-12% Bis-Tris gel and transferred to a PVDF membrane. The membrane was treated (+ LPP) or untreated (- LPP) with lambda protein phosphatase overnight at 4°C and probed with 0.5 µg/mL (1:1000 dilution) of purified anti-PLK-1 Phospho (Thr210) antibody (clone 2A3) for 2 hours at RT. Proteins were visualized by chemiluminescence detection using HRP Goat anti-mouse IgG Antibody (Cat. No. 405306) at a 1:3000 dilution. Direct-Blot™ HRP anti GAPDH Antibody (Cat. No. 607904) was used as a loading control at a 1:25000 dilution (lower). Purified anti-PLK-1 Antibody (Cat. No. 627702) was used as a pan PLK-1 loading control. Lane M: Molecular weight marker.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587