

Plk (F-8): sc-17783



The Power to Question

BACKGROUND

Plk (for polo-like kinase) encodes a serine/threonine kinase that is closely related to polo and CDC5, genes that are required for passage through mitosis in *Drosophila* and *Saccharomyces*, respectively. Polo and CDC5 both code for proteins that are involved in regulating the function of the mitotic spindle. Plk protein accumulates in the cell during the S and G₂ phases of the cell cycle; Plk protein content and catalytic activity peak at the onset of mitosis, followed by a rapid reduction after mitosis. Plk expression is detectable in mitotically active tissues such as colon and placenta, as well as in tumors of various origins. It has also been suggested that Plk may serve as a marker of cell proliferation.

CHROMOSOMAL LOCATION

Genetic locus: PLK1 (human) mapping to 16p12.2; Plk1 (mouse) mapping to 7 F3.

SOURCE

Plk (F-8) is a mouse monoclonal antibody raised against amino acids 261-412 of Plk of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Plk (F-8) is available conjugated to agarose (sc-17783 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17783 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17783 PE), fluorescein (sc-17783 FITC), Alexa Fluor® 488 (sc-17783 AF488), Alexa Fluor® 546 (sc-17783 AF546), Alexa Fluor® 594 (sc-17783 AF594) or Alexa Fluor® 647 (sc-17783 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-17783 AF680) or Alexa Fluor® 790 (sc-17783 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Plk (F-8) is recommended for detection of Plk of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Plk siRNA (h): sc-36277, Plk siRNA (m): sc-36278, Plk shRNA Plasmid (h): sc-36277-SH, Plk shRNA Plasmid (m): sc-36278-SH, Plk shRNA (h) Lentiviral Particles: sc-36277-V and Plk shRNA (m) Lentiviral Particles: sc-36278-V.

Molecular Weight of Plk: 66 kDa.

Positive Controls: Plk (m): 293T Lysate: sc-127352, HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

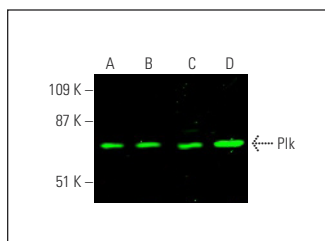
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

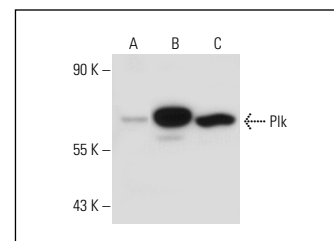
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



Plk (F-8): sc-17783. Near-infrared western blot analysis of Plk expression in HeLa (A), K-562 (B), HEK293T (C) and Jurkat (D) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



Plk (F-8): sc-17783. Western blot analysis of Plk expression in non-transfected 293T: sc-117752 (A), mouse Plk transfected 293T: sc-127352 (B) and K-562 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

- Yuan, J., et al. 2002. Cooperative phosphorylation including the activity of polo-like kinase 1 regulates the subcellular localization of cyclin B1. *Oncogene* 21: 8282-8292.
- Villeneuve, J., et al. 2013. MEK1 inactivates Myt1 to regulate Golgi membrane fragmentation and mitotic entry in mammalian cells. *EMBO J.* 32: 72-85.
- Li, Z., et al. 2014. Plk1 phosphorylation of PTEN causes a tumor-promoting metabolic state. *Mol. Cell. Biol.* 34: 3642-3661.
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- Chen, L., et al. 2016. Combining p53 stabilizers with metformin induces synergistic apoptosis through regulation of energy metabolism in castration-resistant prostate cancer. *Cell Cycle* 15: 840-849.
- Vallejo, A., et al. 2017. An integrative approach unveils FOSL1 as an oncogene vulnerability in KRAS-driven lung and pancreatic cancer. *Nat. Commun.* 8: 14294.
- Werwein, E., et al. 2018. Activation of the oncogenic transcription factor B-Myb via multisite phosphorylation and prolyl *cis/trans* isomerization. *Nucleic Acids Res.* 47: 103-121.
- Gul, N., et al. 2019. The MTH1 inhibitor TH588 is a microtubule-modulating agent that eliminates cancer cells by activating the mitotic surveillance pathway. *Sci. Rep.* 9: 14667.
- Yamagishi, A., et al. 2020. Targeting Insulin-like growth factor 1 receptor delays M-phase progression and synergizes with aurora B inhibition to suppress cell proliferation. *Int. J. Mol. Sci.* 21: 1058.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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