

# Plk (N-19): sc-6355



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 G<sub>2</sub> 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.

## REFERENCES

1. Sunkel, C.E., et al. 1988. Polo, a mitotic mutant of *Drosophila* displaying abnormal spindle poles. *J. Cell Sci.* 89: 25-38.
2. Kitada, K., et al. 1993. A multicopy suppressor gene of the *Saccharomyces cerevisiae* G<sub>1</sub> cell cycle mutant gene *dbf4* encodes a protein kinase and is identified as CDC5. *Mol. Cell. Biol.* 13: 4445-4457.
3. Lake, R.J., et al. 1993. Cell cycle- and terminal differentiation-associated regulation of the mouse mRNA encoding a conserved mitotic protein kinase. *Mol. Cell. Biol.* 13: 7793-7801.
4. Hamanaka, R., et al. 1994. Cloning and characterization of human and murine homologues of the *Drosophila* polo serine-threonine kinase. *Cell Growth Differ.* 5: 249-257.
5. Holtrich, U., et al. 1994. Induction and down-regulation of Plk, a human serine/threonine kinase expressed in proliferating cells and tumors. *Proc. Natl. Acad. Sci. USA* 91: 1736-1740.

## CHROMOSOMAL LOCATION

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

## SOURCE

Plk (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Plk of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-6355 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

## APPLICATIONS

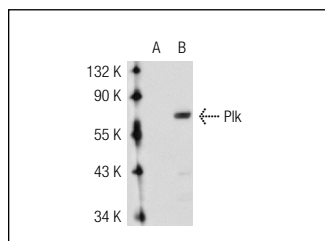
Plk (N-19) is recommended for detection of Plk of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) 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.

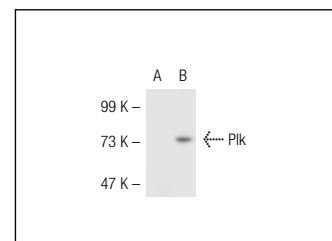
Molecular Weight of Plk: 66 kDa.

Positive Controls: Plk (h2): 293T Lysate: sc-170528, Plk (m): 293T Lysate: sc-127352 or HeLa whole cell lysate: sc-2200.

## DATA



Plk (N-19): sc-6355. Western blot analysis of Plk expression in non-transfected: sc-117752 (A) and human Plk transfected: sc-170528 (B) 293T whole cell lysates.



Plk (N-19): sc-6355. Western blot analysis of Plk expression in non-transfected: sc-117752 (A) and mouse Plk transfected: sc-127352 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Masuda, Y., et al. 2004. Involvement of tumor necrosis factor receptor-associated protein 1 (TRAP1) in apoptosis induced by β-hydroxyisovalerylshikonin. *J. Biol. Chem.* 279: 42503-42515.
2. Fung, T.K., et al. 2007. Specialized roles of the two mitotic cyclins in somatic cells: cyclin A as an activator of M phase-promoting factor. *Mol. Biol. Cell* 18: 1861-1873.
3. Adler, M., et al. 2009. Modulation of key regulators of mitosis linked to chromosomal instability is an early event in ochratoxin A carcinogenicity. *Carcinogenesis* 30: 711-719.
4. Chow, J.P., et al. 2012. The CDK1 inhibitory kinase MYT1 in DNA damage checkpoint recovery. *Oncogene*. E-published.

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Try **Plk (F-8): sc-17783** or **Plk (E-2): sc-55504**, our highly recommended monoclonal alternatives to Plk (N-19). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Plk (F-8): sc-17783**.