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Plk (h2): 293T Lysate: sc-170528

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.

REFERENCES

1. Sunkel, C.E. and Glover, D.M. 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* G₁ cell cycle mutant gene *dbf4* encodes a protein kinase and is identified as CDC5. *Mol. Cell. Biol.* 13: 4445-4457.
3. Lake, R.J. and Jelenik, W.R. 1993. Cell cycle- and terminal differentiation-associated regulation of the mouse mRNA encoding a conserved mitotic protein kinase. *Mol. Cell. Biol.* 73: 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.
6. Golsteyn, R.M., et al. 1994. Cell cycle analysis and chromosomal localization of human Plk1, a putative homologue of the mitotic kinases *Drosophila* polo and *Saccharomyces cerevisiae* Cdc5. *J. Cell Sci.* 107: 1509-1517.
7. Smith, M.R., et al. 1997. Malignant transformation of mammalian cells initiated by constitutive expression of the polo-like kinase. *Biochem. Biophys. Res. Commun.* 234: 397-405.

CHROMOSOMAL LOCATION

Genetic locus: PLK1 (human) mapping to 16p12.2.

PRODUCT

Plk (h2): 293T Lysate represents a lysate of human Plk transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

APPLICATIONS

Plk (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive Plk antibodies. Recommended use: 10-20 µl per lane.

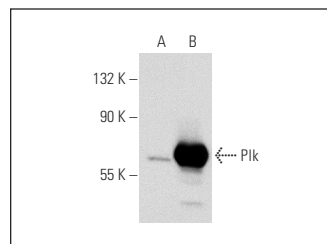
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Plk (F-8): sc-17783 is recommended as a positive control antibody for Western Blot analysis of enhanced human Plk expression in Plk transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

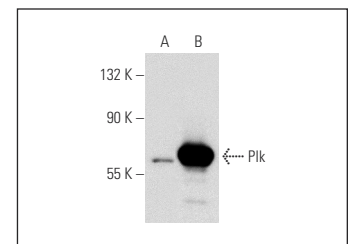
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



Plk (F-8): sc-17783. Western blot analysis of Plk expression in non-transfected: sc-117752 (A) and human Plk transfected: sc-170528 (B) 293T whole cell lysates.



Plk (AZ27): sc-53419. Western blot analysis of Plk expression in non-transfected: sc-117752 (A) and human Plk transfected: sc-170528 (B) 293T whole cell lysates.

RESEARCH USE

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