SANTA CRUZ BIOTECHNOLOGY, INC.

p-Plk (Thr 210): sc-135706

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_2 phases of the cell cycle and both 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. The phosphorylation of mouse, rat and human Plk on Thr 210 enhances Plk catalytic activity.

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* G_1 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 Jelinek, W.R. 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 downregulation 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.

CHROMOSOMAL LOCATION

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

SOURCE

p-Plk (Thr 210) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Thr 210 phosphorylated Plk of human origin.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

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

PRODUCT

Each vial contains IgG in 100 µl of 10 mM HEPES with 150 mM NaCl, 50% glycerol and < 0.1% BSA.

APPLICATIONS

p-Plk (Thr 210) is recommended for detection of Thr 210 phosphorylated Plk of mouse, rat, human, bovine and canine and *Xenopus laevis* origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000) and immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)].

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.

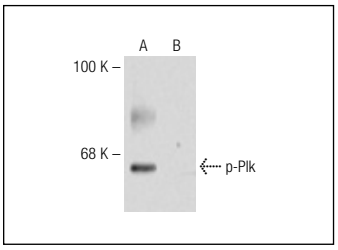
Molecular Weight of p-Plk: 66 kDa.

Positive Controls: rat synaptic membrane tissue extract.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



p-Plk (Thr 210): sc-135706. Western blot analysis of Plk phosphorylation in untreated (**A**) and lambda protein phosphatase (sc-200312A) treated (**B**) rat synaptic membrane tissue extracts.

SELECT PRODUCT CITATIONS

1. Baran, V., et al. 2013. Polo-like kinase 1 is essential for the first mitotic division in the mouse embryo. Mol. Reprod. Dev. E-published.

PROTOCOLS

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