SANTA CRUZ BIOTECHNOLOGY, INC.

p-PRC1 (Thr 481): sc-11768

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The Power to Question

BACKGROUND

Sequential activation and inactivation of Cdk/cyclin complexes regulates the cell cycle. PRC1 (for protein regulating cytokinesis 1) has been identified as a substrate for several Cdks, including Cdc2 and Cdk2. PRC1 is phosphorylated *in vivo* at sites that are phosphorylated by Cdk *in vitro,* strongly suggesting that PRC1 is an *in vivo* Cdk substrate. PRC1 binds to the midzone of mitotic spindles, during anaphase and is localized to the cell midbody during cytokinesis. Depletion of PRC1 prevents cellular cleavage, but has no effect on nuclear division, suggesting that PRC1 is important in mitosis.The yeast homolog of PRC1, Ase1, is essential for spindle assembly, elongation and disassembly during mitosis. Ase1 has been shown to undergo degradation mediated by the APC (anaphase-promoting complex) upon entry into G_1 phase.

REFERENCES

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2. King, R.W., et al. 1994. Mitosis in transition. Cell 79: 563-571.
3. Sherr, C.J. 1994. G_1 phase progression: cycling on cue. Cell 79: 551-555.
4. Pellman, D., et al. 1995. Two microtubule-associated proteins required for anaphase spindle movement in *Saccharomyces cerevisiae*. J. Cell. Biol. 130: 1373-1385.
5. Juang, Y.L., et al. 1997. APC-mediated proteolysis of Ase1 and the morphogenesis of the mitotic spindle. Science 275: 1311-1314.
6. Jiang, W., et al. 1998. PRC1: a human mitotic spindle-associated Cdk substrate protein required for cytokinesis. Mol. Cell 2: 877-885.
7. Mollinari, C., et al. 2002. PRC1 is a microtubule binding and bundling protein essential to maintain the mitotic spindle midzone. J. Cell. Biol. 157: 1175-1186.
8. Ban, R., et al. 2004. Human mitotic spindle-associated protein PRC1 inhibits MgcRacGAP activity toward Cdc42 during the metaphase. J. Biol. Chem. 279: 16394-16402.

CHROMOSOMAL LOCATION

Genetic locus: PRC1 (human) mapping to 15q26.1; Prc1 (mouse) mapping to 7 D2.

SOURCE

p-PRC1 (Thr 481) is available as either goat (sc-11768) or rabbit (sc-11768-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Thr-481 of PRC1 of human origin.

STORAGE

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

PROTOCOLS

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

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-11768 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-PRC1 (Thr 481) is recommended for detection of Thr 481 phosphorylated PRC1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 PRC1 siRNA (h): sc-44039, PRC1 shRNA Plasmid (h): sc-44039-SH and PRC1 shRNA (h) Lentiviral Particles: sc-44039-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: for goat primary antibody (sc-11768): use donkey anti-goat IgG-HRP: sc-2020 (range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (range: 1:2000-1:5000), for rabbit primary antibody (sc-11768-R): use goat anti-rabbit IgG-HRP: sc-2004 (range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: for goat primary antibody (sc-11768): use donkey anti-goat IgG-FITC: sc-2024 (range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (range: 1:100-1:400), for rabbit primary antibody (sc-11768-R): use goat anti-rabbit IgG-FITC: sc-2012 (range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Zhu, C., et al. 2004. Cell cycle-dependent translocation of PRC1 on the spindle by Kif4 is essential for midzone formation and cytokinesis. Proc. Natl. Acad. Sci. USA 102: 343-348.
2. Zhu, C., et al. 2006. Spatiotemporal control of spindle midzone formation by PRC1 in human cells. Proc. Natl. Acad. Sci. USA 103: 6196-6201.

RESEARCH USE

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

MONOS Satisfaction Guaranteed

Try **p-PRC1 (C-2): sc-377544**, our highly recommended monoclonal alternative to p-PRC1 (Thr 481).