

# p-PRC1 (C-2): sc-377544

## 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 Cdk, 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<sub>1</sub> phase.

## REFERENCES

- Sherr, C.J. 1994. G<sub>1</sub> phase progression: cycling on cue. *Cell* 79: 551-555.
- Heichman, K.A. and Roberts, J.M. 1994. Rules to replicate by. *Cell* 79: 557-562.
- King, R.W., et al. 1994. Mitosis in transition. *Cell* 79: 563-571.
- Pellman, D., et al. 1995. Two microtubule-associated proteins required for anaphase spindle movement in *Saccharomyces cerevisiae*. *J. Cell Biol.* 130: 1373-1385.
- Juang, Y.L., et al. 1997. APC-mediated proteolysis of Ase1 and the morphogenesis of the mitotic spindle. *Science* 275: 1311-1314.

## CHROMOSOMAL LOCATION

Genetic locus: PRC1 (human) mapping to 15q26.1.

## SOURCE

p-PRC1 (C-2) is a mouse monoclonal antibody raised against a short amino acid sequence containing Thr 481 phosphorylated PRC1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-PRC1 (C-2) is available conjugated to agarose (sc-377544 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377544 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377544 PE), fluorescein (sc-377544 FITC), Alexa Fluor® 488 (sc-377544 AF488), Alexa Fluor® 546 (sc-377544 AF546), Alexa Fluor® 594 (sc-377544 AF594) or Alexa Fluor® 647 (sc-377544 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377544 AF680) or Alexa Fluor® 790 (sc-377544 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377544 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## RESEARCH USE

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

## APPLICATIONS

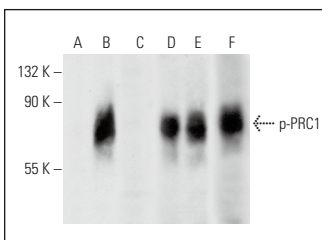
p-PRC1 (C-2) is recommended for detection of Thr 481 phosphorylated PRC1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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.

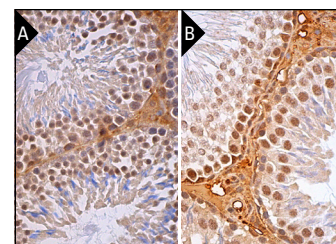
## RECOMMENDED SUPPORT REAGENTS

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, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



Western blot analysis of PRC1 phosphorylation in untreated (A, D), Ser/Thr induction cocktail (sc-362324) treated (B, E) and Ser/Thr induction cocktail (sc-362324) and lambda protein phosphatase (sc-200312A) treated (C, F) HeLa whole cell lysates. Antibodies tested include p-PRC1 (C-2): sc-377544 (A, B, C) and PRC1 (6G2): sc-56345 (D, E, F).



p-PRC1 (C-2): sc-377544. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse testis (A) and rat testis (B) tissue showing nuclear staining of cells in seminiferous ducts and nuclear and cytoplasmic staining of Leydig cells.

## SELECT PRODUCT CITATIONS

- Zhang, H., et al. 2018. Targeting CDK9 reactivates epigenetically silenced genes in cancer. *Cell* 175: 1244-1258.e26.

## STORAGE

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

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA