

# PRC1 (6G2): sc-56345

## 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 binds to the mid-zone of mitotic spindles during anaphase and is localized to the cell midbody during cytokinesis. Depletion of PRC1 has been shown to prevent cellular cleavage, but it has no effect on nuclear division, demonstrating the importance of PRC1 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

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- 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.
- Jiang, W., et al. 1998. PRC1: a human mitotic spindle-associated Cdk substrate protein required for cytokinesis. *Mol. Cell* 2: 877-885.
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- Vogel, T., et al. 2006. Differential expression of Polycomb repression complex 1 (PRC1) members in the developing mouse brain reveals multiple complexes. *Dev. Dyn.* 235: 2574-2585.

## CHROMOSOMAL LOCATION

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

## SOURCE

PRC1 (6G2) is a mouse monoclonal antibody raised against amino acids 1-150 of PRC1 of human origin.

## PRODUCT

Each vial contains 50 µg IgG<sub>2b</sub> in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## 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

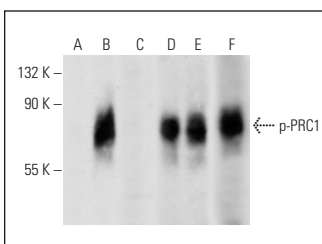
PRC1 (6G2) is recommended for detection of PRC1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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.

Molecular Weight of PRC1: 72 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

## 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).

## SELECT PRODUCT CITATIONS

- Abe, Y., et al. 2007. A mitotic kinase TOPK enhances Cdk1/cyclin B1-dependent phosphorylation of PRC1 and promotes cytokinesis. *J. Mol. Biol.* 370: 231-245.
- Espinosa, A.M., et al. 2013. Mitosis is a source of potential markers for screening and survival and therapeutic targets in cervical cancer. *PLoS ONE* 8: e55975.
- Pangou, E., et al. 2021. A PKD-MFF signaling axis couples mitochondrial fission to mitotic progression. *Cell Rep.* 35: 109129.
- Almeida, A.C., et al. 2022. Augmin-dependent microtubule self-organization drives kinetochore fiber maturation in mammals. *Cell Rep.* 39: 110610.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.