

PRC1 (C-1): sc-376983

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 midzone 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 G₁ phase.

CHROMOSOMAL LOCATION

Genetic locus: PRC1 (human) mapping to 15q26.1; Prc1 (mouse) mapping to 7 D3.

SOURCE

PRC1 (C-1) is a mouse monoclonal antibody raised against amino acids 451-620 mapping at the C-terminus of PRC1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PRC1 (C-1) is available conjugated to agarose (sc-376983 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376983 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376983 PE), fluorescein (sc-376983 FITC), Alexa Fluor® 488 (sc-376983 AF488), Alexa Fluor® 546 (sc-376983 AF546), Alexa Fluor® 594 (sc-376983 AF594) or Alexa Fluor® 647 (sc-376983 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376983 AF680) or Alexa Fluor® 790 (sc-376983 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

PRC1 (C-1) is recommended for detection of PRC1 of mouse, rat and 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) 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 siRNA (m): sc-44346, PRC1 shRNA Plasmid (h): sc-44039-SH, PRC1 shRNA Plasmid (m): sc-44346-SH, PRC1 shRNA (h) Lentiviral Particles: sc-44039-V and PRC1 shRNA (m) Lentiviral Particles: sc-44346-V.

Molecular Weight of PRC1: 72 kDa.

Positive Controls: PRC1 (m): 293T Lysate: sc-127378, HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

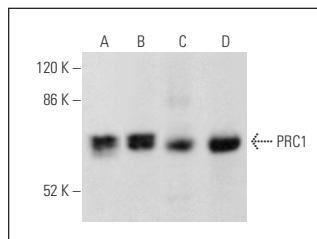
RESEARCH USE

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

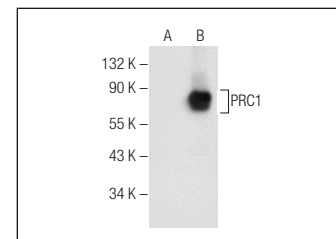
STORAGE

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

DATA



PRC1 (C-1): sc-376983. Western blot analysis of PRC1 expression in HeLa (A) and K-562 (B) whole cell lysates and rat brain (C) and rat testis (D) tissue extracts.



PRC1 (C-1): sc-376983. Western blot analysis of PRC1 expression in non-transfected: sc-117752 (A) and mouse PRC1 transfected: sc-127378 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Taulet, N., et al. 2017. IFT proteins spatially control the geometry of cleavage furrow ingression and lumen positioning. *Nat. Commun.* 8: 1928.
2. Percey, R.T., et al. 2018. p27^{Kip1} regulates the microtubule bundling activity of PRC1. *Biochim. Biophys. Acta Mol. Cell Res.* 1865: 1630-1639.
3. Capalbo, L., et al. 2019. The midbody interactome reveals unexpected roles for PP1 phosphatases in cytokinesis. *Nat. Commun.* 10: 4513.
4. Johnson, J.M., et al. 2020. A genetic toggle for chemical control of individual Plk1 substrates. *Cell Chem. Biol.* 27: 350-362.e8.
5. Paccosi, E., et al. 2020. The Cockayne syndrome group A and B proteins are part of a ubiquitin-proteasome degradation complex regulating cell division. *Proc. Natl. Acad. Sci. USA* 117: 30498-30508.
6. Li, X.H., et al. 2021. PRC1 is a critical regulator for anaphase spindle midzone assembly and cytokinesis in mouse oocyte meiosis. *FEBS J.* 288: 3055-3067.
7. Jagric, M., et al. 2021. Optogenetic control of PRC1 reveals its role in chromosome alignment on the spindle by overlap length-dependent forces. *Elife* 10: e61170.
8. Asthana, J., et al. 2021. Gradual compaction of the central spindle decreases its dynamicity in PRC1 and EB1 gene-edited cells. *Life Sci. Alliance* 4: e202101222.
9. Vukušić, K., et al. 2021. Microtubule-sliding modules based on kinesins EG5 and PRC1-dependent KIF4A drive human spindle elongation. *Dev. Cell* 56: 1253-1267.e10.
10. Sharma, M., et al. 2021. DNA damage response proteins synergistically affect the cancer prognosis and resistance. *Free Radic. Biol. Med.* 178: 174-188.

PROTOCOLS

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