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PRC1 Antibody

Catalog # ASC11476

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	O43663
Other Accession	NP_003972, 4506039
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	71607
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	PRC1 antibody can be used for detection of Prc1 by Western blot at 0.5 - 1 g/mL. Antibody can also be used for immunohistochemistry starting at 2.5 g/mL. For immunofluorescence start at 2.5 g/mL.

Additional Information

Gene ID	9055
Other Names	Protein regulator of cytokinesis 1, PRC1 {ECO:0000312|EMBL:AAC02688.1}
Target/Specificity	PRC1; At least three alternatively spliced transcript variants encoding distinct isoforms have been observed.
Reconstitution & Storage	PRC1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	PRC1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PRC1 (HGNC:9341)
Function	Key regulator of cytokinesis that cross-links antiparrallel microtubules at an average distance of 35 nM. Essential for controlling the spatiotemporal formation of the midzone and successful cytokinesis. Required for KIF14 localization to the central spindle and midbody. Required to recruit PLK1 to the spindle. Stimulates PLK1 phosphorylation of RACGAP1 to allow recruitment of ECT2 to the central spindle. Acts as an oncogene for promoting bladder cancer cells proliferation, apoptosis inhibition and carcinogenic progression (PubMed:17409436).

Cellular Location	Nucleus. Cytoplasm. Cytoplasm, cytoskeleton, spindle pole. Midbody. Chromosome. Note=Colocalized with KIF20B in the nucleus of bladder carcinoma cells at the interphase. Colocalized with KIF20B in bladder carcinoma cells at prophase, metaphase, early anaphase, at the midzone in late anaphase and at the contractile ring in telophase (PubMed:17409436). Predominantly localized to the nucleus of interphase cells. During mitosis becomes associated with the mitotic spindle poles and localizes with the cell midbody during cytokinesis Co-localizes with PRC1 in early mitosis and at the spindle midzone from anaphase B to telophase (PubMed:15297875, PubMed:15625105)
Tissue Location	Overexpressed in bladder cancer cells (PubMed:17409436).

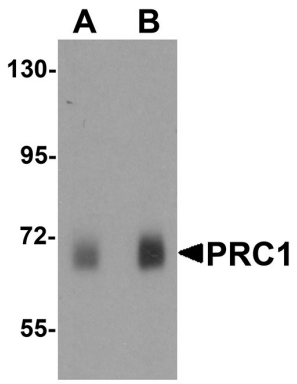
Background

PRC1 Antibody: PRC1 (Protein Regulator of Cytokinesis 1) is a key regulator of cytokinesis and has been identified as a substrate for several cyclin-dependent kinases (CDKs). High levels of PRC1 expression occurs during S and G2/M and drops dramatically after mitosis exit and G1 entry. It is located in the nucleus during interphase and 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.

References

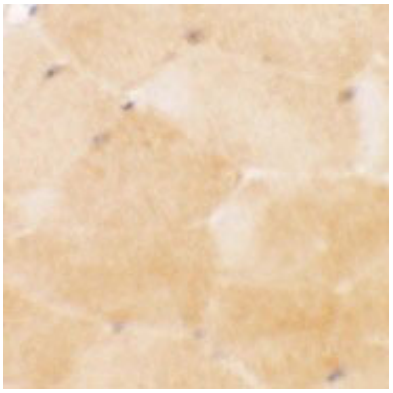
Jiang W, Jimenez G, Wells NJ, et al. PRC1: a human mitotic spindle-associated Cdk substrate protein required for cytokinesis. Mol. Cell 1998; 2:877-85.
Pellman D, Bagget M, Tu H, et al. Two microtubule-associated proteins required for anaphase spindle movement in Saccharomyces Cerevisiae. J. Cell Biol. 1995; 130:1373-85.
Kurasawa Y, Earnshaw WC, Mochizuki Y, et al. Essential roles of KIF4 and its binding partner PRC1 in organized central spindle midzone formation. EMBO J. 2004; 23:3237-48.
Mollinari C, Kleman JP, Jiang W, et al. PRC1 is a microtubule binding and bundling protein essential to maintain the mitotic spindle midzone. J. Cell Biol. 2002; 157:1175-86.

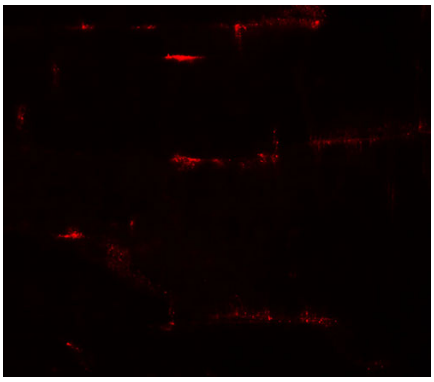
Images



Western blot analysis of PRC1 in human skeletal muscle tissue lysate with Prc1 antibody at (A) 0.5 µg/ml and (B) 1 µg/mL.

Immunohistochemistry of PRC1 in mouse skeletal muscle tissue with PRC1 antibody at 2.5 µg/mL.





Immunofluorescence of PRC1 in mouse skeletal muscle tissue with PRC1 antibody at 20 µg/mL.

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