abcam

ab51248

Anti-PRC1 antibody [EP1513Y]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EP1513Y
Purification technique	Affinity purification Protein A
Concentration	0.254 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/30
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information Protein regulator of cytokinesis 1

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).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	PRC1 also known as Protein Regulator of Cytokinesis 1 affiliates with cellular division mechanics. This protein weighs approximately 72 kDa. PRC1 localizes in

	the nucleus during the interphase and redistributes to the spindle midzone during mitosis. It plays a role in the stabilization of microtubules facilitating proper cytokinesis. Expression of PRC1 occurs in several human tissues notably in dividing cells.
Biological function summary	PRC1 functions in accurately regulating actin and microtubule interaction during cell division. As a part of the centralspindlin complex it ensures correct spindle midzone formation and serves as a marker for the cleavage furrow. Cellular events coordinated by PRC1 involve chromosomal segregation and rapidly proliferating cells express it to maintain integrity during mitotic processes.
Pathways	PRC1 contributes significantly to the mitotic spindle checkpoint. It participates in the Aurora B kinase pathway interacting with proteins like KIF4A and PLK1. This protein ensures the transition from metaphase to anaphase is precise preventing aneuploidy. As a pathway node PRC1 manages signal transduction facilitating cell cycle regulation and fidelity.
Associated diseases and disorders	Dysregulation of PRC1 expression associates with cancer notably prostate and breast cancer. Tumor cells often display altered PRC1 activity linked to abnormal cell proliferation. The protein interacts with the oncogenic proteins such as p53 indicating a role in tumorigenesis and progression. Exploring therapeutic strategies targeting PRC1 could provide insights into cancer treatment.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

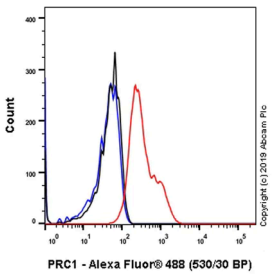
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

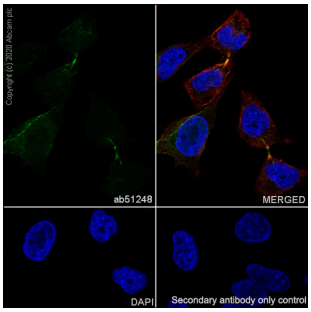
5 product images



Flow Cytometry (Intracellular) - Anti-PRC1 antibody [EP1513Y] (ab51248)

PRC1 Flow Cytometry (Intracellular) staining using rabbit Anti-PRC1 antibody

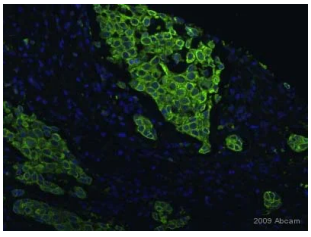
Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling PRC1 with Purified 51248 at 1/30 dilution (10 µg/ml) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunocytochemistry/ Immunofluorescence - Anti-PRC1 antibody [EP1513Y] (ab51248)

PRC1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PRC1 antibody

Immunocytochemistry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling PRC1 with Purified 238427 at 1:50 dilution (5.06 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488,ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.

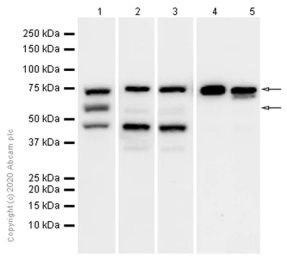


This image is courtesy of an anonymous customer review.

Immunocytochemistry/ Immunofluorescence - Anti-PRC1 antibody [EP1513Y] (ab51248)

PRC1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PRC1 antibody

ab51248 staining PRC1 in human breast cancer cells by ICC/IF. The cells were paraformaldehyde fixed and blocked in 1% serum for 1 hour at 37°C without permeation step. The primary antibody was diluted 1/100 (PBS) and incubated with sample for 1 hour at 20°C. An Alexa Fluor® 488 conjugated donkey polyclonal to rabbit IgG, diluted 1/200 was used as secondary.



Western blot - Anti-PRC1 antibody [EP1513Y] (ab51248)

ab51248 recognise two isoforms of PRC1. But we are unsure how to define the extra bands at ~50kDa.
All lanes:
Western blot - Anti-PRC1 antibody [EP1513Y] (ab51248) at 1/1000 dilution

Lane 1:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
C6 (Rat glial tumor glial cell) whole cell lysate at 20 µg

Lane 3:

C2C12 (Mouse myoblasts myoblast) whole cell lysate at 20 µg

Lane 4:
Mouse kidney lysate at 20 µg

Lane 5:
Rat kidney lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 72 kDa

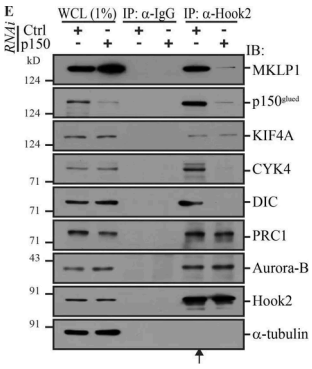


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Western blot - Anti-PRC1 antibody [EP1513Y] (ab51248)

PRC1 Western blot staining using rabbit Anti-PRC1 antibody

PRC1 western blot using anti-PRC1 antibody [EP1513Y] ab51248. Publication image and figure legend from Dwivedi, D., Kumari, A., et al., 2019, J Cell Biol, PubMed 30674580.

ab51248 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab51248 please see the product overview.

Hook2 is required for p150glued and MKLP1 interaction during cytokinesis. (A) Lysates of HEK293T cells synchronized in either G2 phase or cytokinesis were IP with control IgG or anti-MKLP1 antibody and IB with indicated antibodies. (B) Ratio of normalized band intensity (cytokinesis lane) of IP p150glued and DIC to MKLP1 in A (n = 2). (C) Whole-cell lysates of HEK293T cells harvested during the cytokinesis stage were incubated with either MBP or MBP-tagged Hook2 N427 (WT, Q143A, and I150A) and IB for MKLP1. (D) Ratio of band intensity of pulldown to input Hook2 (WT/mutants) signal in C (n = 2). (E) Lysates of HEK293T cells treated with control or p150glued siRNA and harvested during cytokinesis stage were IP with control IgG or anti-Hook2 antibody and IB with the indicated antibodies. (F) Ratio of normalized band intensity (control siRNA) of coIP proteins (as indicated) to MKLP1 in E (n = 2). (G) Lysates of HEK293T cells transfected with indicated siRNA and harvested during cytokinesis stage were tested for dynactin association with MKLP1. (H) Ratio of normalized band intensity (control siRNA) of IP p150glued and DIC to MKLP1 in G (n = 3). (I) Representative images of HeLa cells ectopically expressing HA-tagged zebrafish Hook2 (HA-zHook2) costained for centrosomes, dynein, and dynactin. Bars, 10 µm; insets, 2 µm. (J) Lysates from asynchronous HEK293T cells treated with indicated siRNA and transfected with indicated plasmids were IP with control IgG or anti-DIC antibody and IB for p150glued. (K) Ratio of normalized band intensity (control siRNA) of IP p150glued to DIC in J (n = 2). (L) Representative differential interference contrast images of zebrafish embryos injected with either nontargeting control morpholino or indicated concentration of zHook2 morpholino immediately after fertilization and imaged at the indicated time. Each concentration of morpholino was injected in 100 fertilized embryos and monitored over time. Bars, 500 µm. Data represent mean ± SD (ns, not significant; ***, $p < 0.001$; Student's t test). (M) Proposed model depicting the role of Hook2 in mediating formation of dynein–dynactin complex and targeting of MKLP1 to the spindle midzone.

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