abcam

ab181140

Anti-RING2 / RING1B / RNF2 antibody [EPR12245]

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR12245
Purification technique	Affinity purification Protein A
Concentration	0.732 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Species	Mouse

Dilution info	1/1000 - 1/10000
Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/250 - 1/500
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information RNF2

Function	E3 ubiquitin-protein ligase that mediates monoubiquitination of 'Lys-119' of histone H2A (H2AK119Ub), thereby playing a central role in histone code and gene regulation (PubMed:15386022, PubMed:16359901, PubMed:21772249, PubMed:25355358, PubMed:25519132, PubMed:26151332, PubMed:33864376). H2AK119Ub gives a specific tag for epigenetic transcriptional repression and participates in X chromosome inactivation of female mammals. May be involved in the initiation of both imprinted and random X inactivation (By similarity). Essential component of a Polycomb group (PcG) multiprotein PRC1-like complex, a complex class required to maintain the transcriptionally repressive state of many genes, including Hox genes, throughout development (PubMed:16359901, PubMed:26151332). PcG PRC1 complex acts via chromatin remodeling and modification of histones, rendering chromatin heritably changed in its expressibility (PubMed:26151332). E3 ubiquitin-protein ligase activity is enhanced by BMI1/PCGF4 (PubMed:21772249). Acts as the main E3 ubiquitin ligase on histone H2A of the PRC1 complex, while RING1 may rather act as a modulator of RNF2/RING2 activity (Probable). Association with the chromosomal DNA is cell-cycle dependent. In resting B- and T-lymphocytes, interaction with AURKB leads to block its activity, thereby maintaining transcription in resting lymphocytes (By similarity). Also acts as a negative regulator of autophagy by mediating ubiquitination of AMBRA1, leading to its subsequent degradation (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
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	RING2 also known as RING1B or RNF2 is a protein that functions as a member of the Polycomb Repressive Complex 1 (PRC1). This protein contains a RING-finger domain facilitating ubiquitin ligase activity. It has a molecular mass of approximately 38 kDa. RING2/RNF2/RING1B is expressed in various tissues including the brain heart and lungs indicating its fundamental role across different biological systems.
Biological function summary	RING2/RNF2/RING1B regulates gene expression by modifying chromatin structure especially through monoubiquitination of histone H2A at lysine 119. This action occurs within the Polycomb Repressive Complex 1 a multiprotein structure important for maintaining the transcriptional repression of target genes. It influences cell cycle progression and development by silencing genes involved in proliferation and differentiation.
Pathways	RING2/RNF2/RING1B's role connects to the Polycomb group (PcG) pathway and the Wnt signaling pathway. Within these pathways it interacts with proteins like BMI1 and EZH2 which are other components of polycomb complexes. These interactions help modulate chromatin dynamics and control the expression of several genes involved in cell identity and development.
Associated diseases and disorders	Dysfunction or aberrant expression of RING2/RNF2/RING1B has links to cancer and neurological disorders. Its relationship with proteins like CBX8 ties it to pathways of oncogenesis where it can influence tumorigenesis through misregulation of gene silencing. Furthermore changes in RING2/RNF2/RING1B expression or function may contribute to developmental disorders associated with improper neuronal development.

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

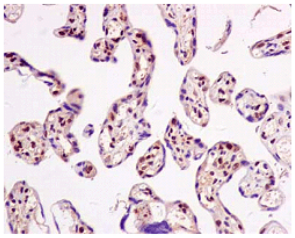
We do not recommend this combination. It is not covered by our product promise.

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.

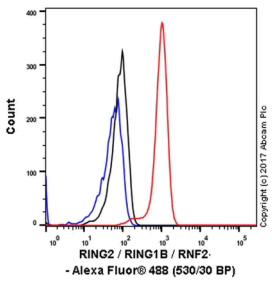
7 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RING2 / RING1B / RNF2 antibody [EPR12245] (ab181140)

RING2 / RING1B / RNF2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-RING2 / RING1B / RNF2 antibody

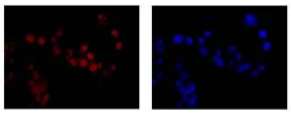
Immunohistochemical analysis of paraffin-embedded Human placenta tissue labeling RING2 / RING1B / RNF2 with ab181140 at 1/500 dilution followed by pre-diluted HRP-conjugated secondary antibody and counter-stained with Hematoxylin.
Perform heat mediated antigen retrieval with EDTA buffer pH 9 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-RING2 / RING1B / RNF2 antibody [EPR12245] (ab181140)

RING2 / RING1B / RNF2 Flow Cytometry (Intracellular) staining using rabbit Anti-RING2 / RING1B / RNF2 antibody

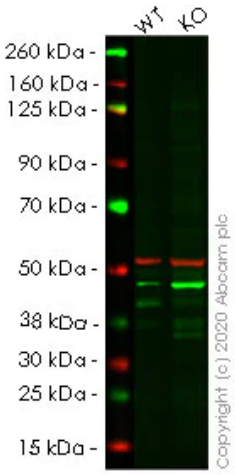
Intracellular Flow Cytometry analysis of HepG2 (human hepatocellular carcinoma) cells labeling RING2 / RING1B / RNF2 with purified ab181140 at 1/70 dilution (10ug/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.



Immunocytochemistry/ Immunofluorescence - Anti-RING2 / RING1B / RNF2 antibody [EPR12245] (ab181140)

RING2 / RING1B / RNF2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-RING2 / RING1B / RNF2 antibody

Immunofluorescent analysis of HepG2 cells (paraformaldehyde-fixed 4%) labeling RING2 / RING1B / RNF2 with ab181140 at 1/250 dilution followed by Goat anti rabbit IgG (Alexa Fluor® 555) secondary at 1/200 dilution and counter-stained with DAPI (blue).



Western blot - Anti-RING2 / RING1B / RNF2 antibody [EPR12245] (ab181140)

RING2 / RING1B / RNF2 Western blot staining using rabbit Anti-RING2 / RING1B / RNF2 antibody

Lanes 1- 2: Merged signal (red and green). Green - ab181140 observed at 42 kDa. Red - Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) observed at 50 kDa.
ab181140 was shown to react with RING2 / RING1B / RNF2 in wild-type HeLa cells in western blot. The band observed in knockout cell line ab264845 (knockout cell lysate ab257640) lane below 42kDa may represent truncated forms and cleaved fragments. This has not been investigated further. Wild-type HeLa and RNF2 knockout HeLa cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab181140 and Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) were incubated overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-RING2 / RING1B / RNF2 antibody [EPR12245] (ab181140) at 1/1000 dilution

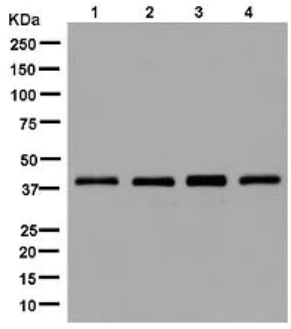
Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
Rnf2 (RING2 / RING1B) knockout HeLa cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 37 kDa

Observed band size: 42 kDa



Western blot - Anti-RING2 / RING1B / RNF2 antibody [EPR12245] (ab181140)

All lanes:
Western blot - Anti-RING2 / RING1B / RNF2 antibody [EPR12245] (ab181140) at 1/10000 dilution

Lane 1:
HeLa cell lysate at 20 µg

Lane 2:
293 cell lysate at 20 µg

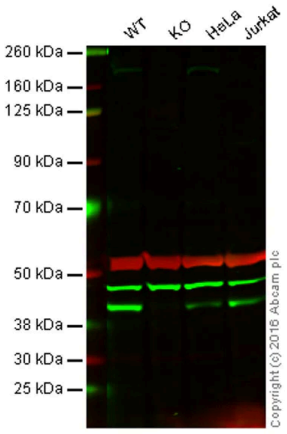
Lane 3:
Jurkat cell lysate at 20 µg

Lane 4:
HepG2 cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugate at 1/1000 dilution

Predicted band size: 37 kDa



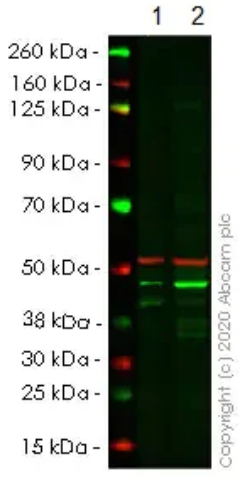
Western blot - Anti-RING2 / RING1B / RNF2 antibody [EPR12245] (ab181140)

RING2 / RING1B / RNF2 Western blot staining using rabbit Anti-RING2 / RING1B / RNF2 antibody

Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: RING2 / RING1B / RNF2 knockout HAP1 cell lysate (20 µg)
Lane 3: HeLa cell lysate (20 µg)
Lane 4: Jurkat cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab181140 observed at 42 kDa. Red - loading control, ab7291, observed at 52 kDa.

ab181140 was shown to recognize RING2 / RING1B / RNF2 when RING2 / RING1B / RNF2 knockout samples were used, along with additional cross-reactive bands. Wild-type and RING2 / RING1B / RNF2 knockout samples were subjected to SDS-PAGE. ab181140 at a dilution of 1/1000 and ab7291 (loading control to alpha Tubulin) at a dilution of 1/10,000 were incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10,000 dilution for 1 h at room temperature before imaging.
All lanes:
Western blot - Anti-RING2 / RING1B / RNF2 antibody [EPR12245] (ab181140)

Predicted band size: 37 kDa



Western blot - Anti-RING2 / RING1B / RNF2 antibody [EPR12245] (ab181140)

Lanes 1- 2: Merged signal (red and green). Green - ab181140 observed at 42 kDa. Red - Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) observed at 50 kDa.
ab181140 was shown to react with RING2 / RING1B / RNF2 in wild-type HeLa cells in western blot. The band observed in CRISPR/Cas9 edited cell line ab264845 (CRISPR/Cas9 edited cell lysate ab257640) lane below 42kDa may represent truncated forms and cleaved fragments. This has not been investigated further. Wild-type HeLa and RNF2 CRISPR/Cas9 edited HeLa cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab181140 and Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) were incubated overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-RING2 / RING1B / RNF2 antibody [EPR12245] (ab181140) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
RNF2 CRISPR/Cas9 edited HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human RNF2 (RING2 / RING1B) knockout HeLa cell line (ab264845)

Performed under reducing conditions.

Predicted band size: 37 kDa

Observed band size: 42 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.