abcam

ab133565

Anti-RBX1 antibody [EPR6850(B)]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 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	EPR6850(B)
Purification technique	Affinity purification Protein A
Dissociation constant	2.18 x 10^{-11} M
Concentration	0.197 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/2000
Notes	For unpurified format use 1/100 to 1/250 dilution

Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/10 - 1/100
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/5000
Notes	For unpurified format use 1/1000 to 1/10000 dilution

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Expected

Species	Mouse
Dilution info	1/50
Notes	-

Species	Rat
Dilution info	1/50
Notes	-

Species	Human
Dilution info	1/50
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. For unpurified format use at 1/100 to 1/1000 dilution.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information RBX1

Function	E3 ubiquitin ligase component of multiple cullin-RING-based E3 ubiquitin-protein ligase (CRLs) complexes which mediate the ubiquitination and subsequent proteasomal degradation of target proteins, including proteins involved in cell

cycle progression, signal transduction, transcription and transcription-coupled nucleotide excision repair (PubMed:10230407, PubMed:10579999, PubMed:11961546, PubMed:15983046, PubMed:16678110, PubMed:19112177, PubMed:19679664, PubMed:22748924, PubMed:23455478, PubMed:27565346, PubMed:29769719, PubMed:32355176, PubMed:33417871, PubMed:37844242, PubMed:38326650, PubMed:39504960, PubMed:39667934, PubMed:38316879). CRLs complexes and ARIH1 collaborate in tandem to mediate ubiquitination of target proteins, ARIH1 mediating addition of the first ubiquitin on CRLs targets (PubMed:27565346). The functional specificity of the E3 ubiquitin-protein ligase complexes depends on the variable substrate recognition components. As a component of the CSA complex mediates ubiquitination of Pol II subunit POLR2A at 'Lys-1268', a critical TC-NER checkpoint (PubMed:32355176, PubMed:34526721). Core component of the Cul7-RING(FBXW8) ubiquitin ligase complex, which mediates the ubiquitination and subsequent proteasomal degradation of target proteins (PubMed:35982156). Core component of a Cul9-RING ubiquitin ligase complex composed of CUL9 and RBX1, which mediates mono-ubiquitination of p53/TP53 (PubMed:38605244). Recruits the E2 ubiquitin-conjugating enzyme CDC34 to the complex and brings it into close proximity to the substrate. Probably also stimulates CDC34 autoubiquitination. May be required for histone H3 and histone H4 ubiquitination in response to ultraviolet and for subsequent DNA repair. Promotes the neddylation of CUL1, CUL2, CUL4 and CUL4 via its interaction with UBE2M. Involved in the ubiquitination of KEAP1, ENC1 and KLHL41. In concert with ATF2 and CUL3, promotes degradation of KAT5 thereby attenuating its ability to acetylate and activate ATM. As part of a multisubunit complex composed of elongin BC complex (ELOB and ELOC), elongin A/ELOA, RBX1 and CUL5; polyubiquitinates monoubiquitinated POLR2A (PubMed:19920177).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

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	RBX1 also known as RING-box protein 1 or ROC1 acts as an E3 ubiquitin ligase part of the ubiquitin-proteasome system. This protein facilitates the transfer of ubiquitin from E2 enzymes to target substrates marking them for degradation. The molecular weight of RBX1 is approximately 12 kDa. RBX1 is mainly expressed in various human tissues with significant expression in the heart brain and skeletal muscle. Its expression in these tissues suggests a wide involvement in cellular processes.
Biological function summary	RBX1 associates with the cullin-RING ubiquitin ligase (CRL) complex. It interacts with cullin proteins and other regulatory subunits to promote the polyubiquitination and subsequent degradation of target proteins. This regulatory activity influences many cellular processes including cell cycle progression DNA repair and signal transduction. By ensuring the degradation of proteins at the right time RBX1 maintains cellular homeostasis.
Pathways	RBX1 plays an important role in the control of protein stability through the ubiquitin-proteasome pathway. This pathway is important for regulating key cellular functions like the entrainment of the cell cycle and apoptosis. RBX1 also interacts with proteins like SKP1 and CUL1 as part of the SCF complex which targets specific proteins for degradation. By modulating these pathways RBX1 contributes to the overall regulation of cellular growth and stress responses.
Associated diseases and disorders	RBX1's malfunctioning links to various types of cancer and neurodegenerative diseases. In cancer altered RBX1 activity can lead to the inappropriate degradation of tumor suppressor proteins promoting uncontrolled cell division. RBX1 is also implicated in neurodegenerative disorders where misregulation of protein degradation contributes to the accumulation of damaged proteins exacerbating disease progression. Additionally the interaction of RBX1 with proteins like p53 in cancer and tau proteins in Alzheimer's illustrates its potential role in disease pathogenesis.

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.

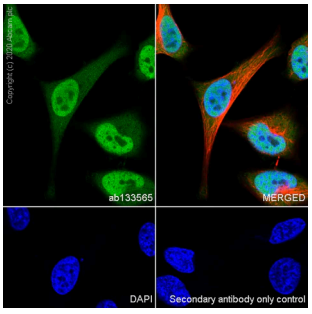
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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

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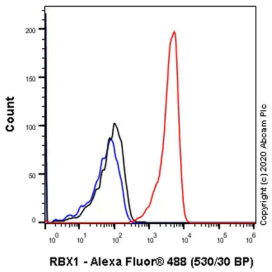
7 product images



Immunocytochemistry/ Immunofluorescence - Anti-RBX1 antibody [EPR6850(B)] (ab133565)

RBX1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-RBX1 antibody

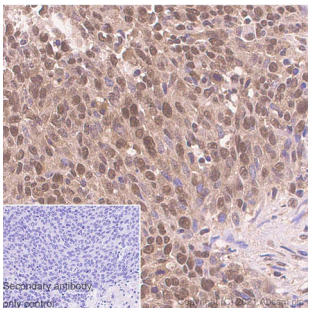
Immunocytochemistry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling RBX1 with Purified ab133565 at 1:50 dilution (3.9 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [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.



Flow Cytometry (Intracellular) - Anti-RBX1 antibody [EPR6850(B)] (ab133565)

RBX1 Flow Cytometry (Intracellular) staining using rabbit Anti-RBX1 antibody

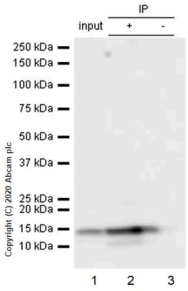
Flow Cytometry analysis of Jurkat (Human T cell leukemia T lymphocyte) cells labelling RBX1 with Purified ab133565 at 1:20 dilution (10 µg/ml) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1:2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabelled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RBX1 antibody [EPR6850(B)] (ab133565)

RBX1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-RBX1 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human lung carcinoma tissue sections labeling RBX1 with Purified ab133565 at 1:2000 dilution (0.099 µg/mL). Heat mediated antigen retrieval was performed using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) . Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.



Immunoprecipitation - Anti-RBX1 antibody [EPR6850(B)] (ab133565)

Purified ab133565 at 1:20 dilution (1µg) immunoprecipitating RBX1 in Jurkat whole cell lysate.

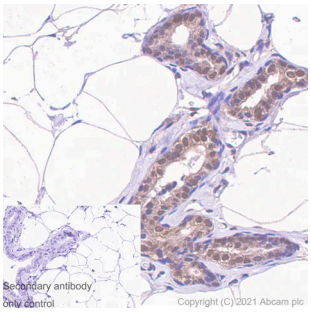
Lane 1 (input): Jurkat (Human T cell leukemia T lymphocyte) whole cell lysate 10µg.
Lane 2 (+): ab133565 + Jurkat whole cell lysate.
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab133565 in Jurkat whole cell lysate.

VeriBlot for IP Detection Reagent (HRP)(ab131366) (1:1000 dilution) was used for Western blotting.

Blocking Buffer and concentration: 5% NFDM/TBST.
Diluting buffer and concentration: 5% NFDM/TBST.
Observed band size: 13 kDa

All lanes:
Immunoprecipitation - Anti-RBX1 antibody [EPR6850(B)] (ab133565)

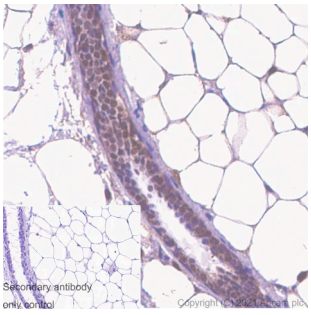
Predicted band size: 12 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RBX1 antibody [EPR6850(B)] (ab133565)

RBX1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-RBX1 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat breast tissue sections labeling RBX1 with Purified ab133565 at 1:2000 dilution (0.099 µg/mL). Heat mediated antigen retrieval was performed using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) . Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.

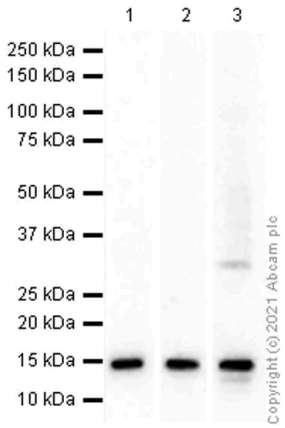


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RBX1 antibody [EPR6850(B)] (ab133565)

RBX1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-RBX1 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse breast tissue sections labeling RBX1 with Purified ab133565 at 1:2000 dilution (0.099 µg/mL). Heat

mediated antigen retrieval was performed using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) . Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.



Western blot - Anti-RBX1 antibody [EPR6850(B)] (ab133565)

RBX1 Western blot staining using rabbit Anti-RBX1 antibody

Blocking and dilution buffer: 5% NFDM/TBST.
Image produced using the purified version.

All lanes:
Western blot - Anti-RBX1 antibody [EPR6850(B)] (ab133565) at 1/5000 dilution

Lane 1:
Jurkat (Human T cell leukemia T lymphocyte) whole cell lysate at 15 µg

Lane 2:
Mouse heart lysate at 15 µg

Lane 3:
Rat heart lysate at 15 µg

Secondary

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

Predicted band size: 12 kDa

Observed band size: 13 kDa

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