abcam

ab209995

Anti-p53R2 + RRM2 antibody [EPR20651]

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	EPR20651
Purification technique	Affinity purification Protein A
Concentration	0.603 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat

Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

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

Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/2000
Notes	IHC not recommended for rat due to non-specific staining in rat samples. Recommend 1:1000 dilution for mouse tissues.

Species	Human
Dilution info	1/2000
Notes	IHC not recommended for rat due to non-specific staining in rat samples. Recommend 1:1000 dilution for mouse tissues.

Expected

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

Target data

See full target information RRM2

Function	Provides the precursors necessary for DNA synthesis. Catalyzes the biosynthesis of deoxyribonucleotides from the corresponding ribonucleotides. Inhibits Wnt signaling.

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	P53R2 also known as RRM2B is a small subunit of the ribonucleotide reductase (RNR) complex with a molecular mass of approximately 43 kDa. This protein is essential for the synthesis of deoxyribonucleotides which are the building blocks of DNA. It operates by reducing ribonucleotides into deoxyribonucleotides an important step in DNA synthesis and repair processes. p53R2 expresses itself in various tissues but is most notable in response to DNA damage indicating its role in cellular stress responses.
Biological function summary	P53R2 contributes significantly to maintaining genome stability. As a part of the RNR complex it interacts with the large subunit RRM1 to facilitate DNA repair and replication especially under stressful conditions. It is activated by the tumor suppressor protein p53 which enhances its DNA repair capabilities. This activation is particularly significant in cells that are arrested in the G1 phase ensuring the availability of deoxyribonucleotides even when DNA replication is halted under unfavorable conditions.
Pathways	P53R2 plays an important role in the p53 pathway and the nucleotide metabolism pathway. It directly links to the p53-mediated DNA damage response pathway where it acts to prevent genomic instability. Associated proteins in these pathways include p21 which regulates the cell cycle and RRM1 forming the active ribonucleotide reductase complex necessary for maintaining the cellular deoxyribonucleotide pool particularly when the DNA is under repair.

Associated diseases and disorders	Alterations in p53R2 expression or function associate with cancer and mitochondrial DNA depletion syndromes. In cancer it often interacts with mutated forms of the p53 protein potentially disrupting its normal DNA repair function and contributing to tumor development. Furthermore deficiencies in p53R2 have been linked to mitochondrial DNA depletion syndrome a disorder characterized by muscle weakness and neurological impairment. Here the protein's interplay with p53 and the fidelity of mitochondrial DNA synthesis becomes critical in maintaining mitochondrial function.

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

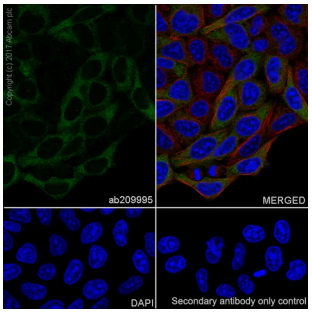
We do not recommend this combination. It is not covered by our product promise.

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.

9 product images



Immunocytochemistry/ Immunofluorescence - Anti-p53R2 + RRM2 antibody [EPR20651] (ab209995)

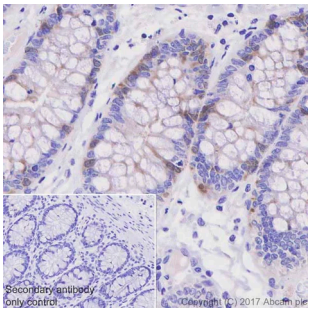
P53R2 + RRM2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-p53R2 + RRM2 antibody

Immunofluorescent analysis of 100% methanol-fixed HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling RRM2+ p53R2 with ab209995 at 1/100 dilution followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on HeLa cells (PMID: 194169810).

The nuclear counterstain is DAPI (blue).

Tubulin is detected with ab195889 (Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594)) at 1/200 dilution (red).

Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.

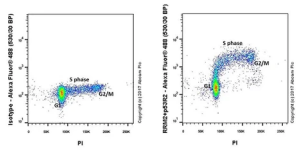


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-p53R2 + RRM2 antibody [EPR20651] (ab209995)

P53R2 + RRM2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-p53R2 + RRM2 antibody

Immunohistochemical analysis of paraffin-embedded human colon tissue labeling RRM2/RRM2B with ab209995 at 1/2000 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic and weak nucleus staining on epithelial cells of human colon (PMID: 23002339). Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

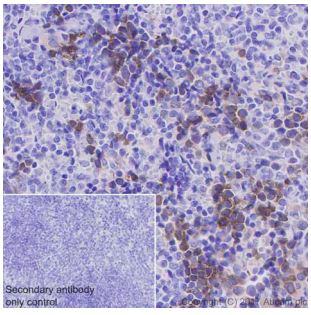
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-p53R2 + RRM2 antibody [EPR20651] (ab209995)

P53R2 + RRM2 Flow Cytometry (Intracellular) staining using rabbit Anti-p53R2 + RRM2 antibody

Intracellular flow cytometric analysis of80% methanol fixed, 0.1% Tween-20 permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cell line labeling p53R2 + RRM2 with ab209995 at 1/500 dilution (right panel) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (left panel). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.

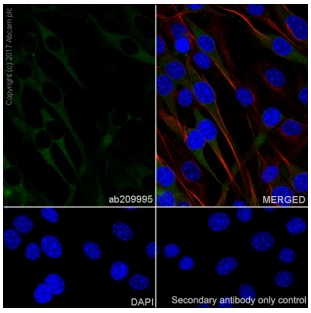


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-p53R2 + RRM2 antibody [EPR20651] (ab209995)

P53R2 + RRM2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-p53R2 + RRM2 antibody

Immunohistochemical analysis of paraffin-embedded mouse spleen tissue labeling RRM2/RRM2B with ab209995 at 1/1000 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic staining on mouse spleen (PMID: 25838540). Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-p53R2 + RRM2 antibody [EPR20651] (ab209995)

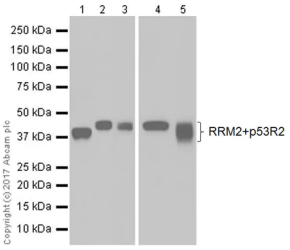
P53R2 + RRM2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-p53R2 + RRM2 antibody

Immunofluorescent analysis of 100% methanol-fixed NIH/3T3 (mouse embryonic fibroblast) cells labeling RRM2+ p53R2 with ab209995 at 1/100 dilution followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing cytoplasmic staining on NIH/3T3 cells.

The nuclear counterstain is DAPI (blue).

Tubulin is detected with ab195889 (Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594)) at 1/200 dilution (red).

Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.



Western blot - Anti-p53R2 + RRM2 antibody [EPR20651] (ab209995)

P53R2 + RRM2 Western blot staining using rabbit Anti-p53R2 + RRM2 antibody

Blocking: 5% NFDM/TBST.
Exposure times: Lanes 1-3: 3 minutes; Lanes 4-5: 15 seconds.

The MW of RRM2 and p53R2 observed is consistent with the literature (PMID 14661056; PMID 15670581; PMID 25213022).

All lanes:
Western blot - Anti-p53R2 + RRM2 antibody [EPR20651] (ab209995) at 1/1000 dilution

Lane 1:
Human ovary cancer at 20 µg

Lane 2:
Human thyroid cancer at 20 µg

Lane 3:
Rat brain at 20 µg

Lane 4:
HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 10 µg

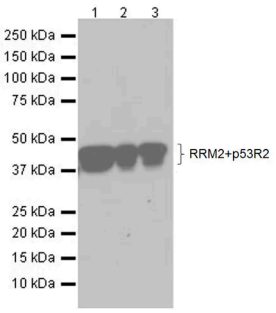
Lane 5:
U-2 OS (Human bone osteosarcoma epithelial cell) whole cell lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Predicted band size: 45 kDa

Observed band size: 41 kDa, 45 kDa



Western blot - Anti-p53R2 + RRM2 antibody [EPR20651] (ab209995)

P53R2 + RRM2 Western blot staining using rabbit Anti-p53R2 + RRM2 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
The MW of RRM2 and p53R2 observed is consistent with the literature (PMID 14661056; PMID 15670581; PMID 25213022).

All lanes:
Western blot - Anti-p53R2 + RRM2 antibody [EPR20651] (ab209995) at 1/1000 dilution

Lane 1:
PC-12 (Rat adrenal gland pheochromocytoma) whole cell lysate at 10 µg

Lane 2:
NIH/3T3 (Mouse embryonic fibroblast) whole cell lysate at 10 µg

Lane 3:
RAW264.7 (Mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 10 µg

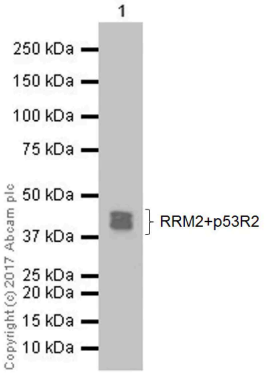
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 45 kDa

Observed band size: 41 kDa, 45 kDa

Exposure time: 30s



Western blot - Anti-p53R2 + RRM2 antibody [EPR20651] (ab209995)

Blocking/Dilution buffer: 5% NFDM/TBST.
The MW of RRM2 and p53R2 observed is consistent with the literature (PMID 14661056; PMID 15670581; PMID 25213022).

All lanes:
Western blot - Anti-p53R2 + RRM2 antibody [EPR20651] (ab209995) at 1/1000 dilution

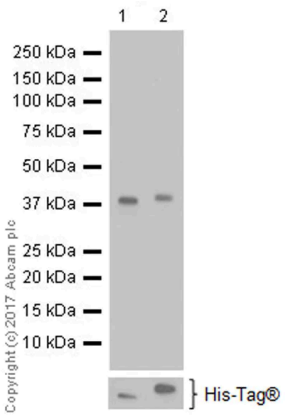
All lanes:
4T1 (mouse mammary gland carcinoma epithelial cell) whole cell lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Predicted band size: 45 kDa

Observed band size: 41 kDa, 45 kDa



Western blot - Anti-p53R2 + RRM2 antibody [EPR20651] (ab209995)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-p53R2 + RRM2 antibody [EPR20651] (ab209995) at 1/10000 dilution

Lane 1:
His-tagged human RRM2 recombinant protein, 10 ng

Lane 2:
His-tagged human p53R2 recombinant protein, 10 ng

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 45 kDa

Observed band size: 38 kDa, 39 kDa

Exposure time: 1s

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