abcam

ab251513

Anti-p53R2+RRM2 antibody [EPR20651] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR20651
Purification technique	Affinity purification Protein A
Concentration	0.98 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Mouse, Human
Dilution info	-

Notes	-

Expected

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

WB

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	-

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	-
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	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab251513 is the carrier-free version of ab209995.

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	The p53R2+RRM2 complex also known as the ribonucleotide reductase small subunit p53R2 and ribonucleotide reductase M2 plays a mechanical role in DNA synthesis and repair. The mass of p53R2 is approximately 41 kDa while RRM2 is around 45 kDa. Together they form a vital part of the ribonucleotide reductase enzyme which is essential for converting ribonucleotides to deoxyribonucleotides the building blocks of DNA. This complex is expressed in many tissues but shows increased levels in response to DNA damage reflecting its role in responding to cellular stress.
Biological function summary	This complex is involved in maintaining genomic stability by supporting DNA repair processes. The p53R2 subunit is inducible by p53 linking its activity to cell cycle regulation and DNA damage response pathways. While p53R2 is induced by DNA damage RRM2 is generally expressed throughout the cell cycle ensuring a constant supply of deoxyribonucleotides for DNA replication and repair. Together these subunits ensure that cells can quickly respond to repair needs and maintain DNA integrity during stress events.
Pathways	The p53R2+RRM2 complex sits at the crossroads of the DNA repair and replication processes. The DNA damage response pathway heavily involves the p53 protein which upregulates p53R2 to ensure deoxyribonucleotide supply in repair mechanisms. Beyond the DNA damage response this complex also connects with the cell cycle pathway through the regulation of RRM2. Cyclin-dependent kinases and other cell cycle regulators are associated with controlling the levels and activity of RRM2 coordinating DNA synthesis with cell division.

Associated diseases and disorders

Dysregulation of the p53R2+RRM2 complex links to cancer and neurodegenerative diseases. Mutations or altered expression of p53R2 may contribute to tumorigenesis by failing to repair damaged DNA efficiently. In certain cancers RRM2 overexpression occurs supporting increased cell proliferation. Additionally defects in DNA repair mechanisms involving the p53R2 subunit contribute to neurodegenerative disorders where accumulated DNA damage in neuronal cells leads to pathology. The p53 protein through its regulatory influence connects the function of this complex to both cancer progression and neurological disorders.

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

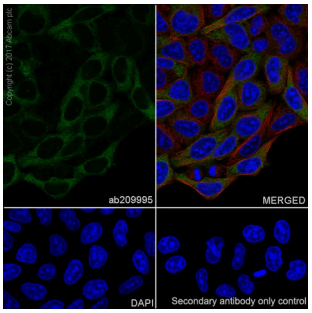
We do not recommend this combination. It is not covered by our product promise.

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] - BSA and Azide free (ab251513)

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

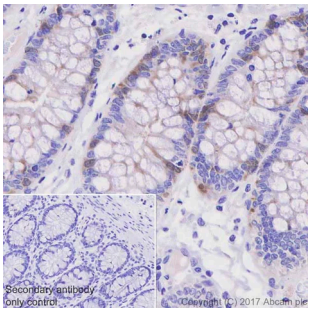
This data was developed using ab209995, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 100% methanol-fixed HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling RRM2+ p53R2 with ab209995 at 1/100 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 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.



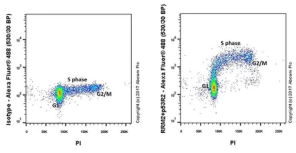
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-p53R2+RRM2 antibody [EPR20651] - BSA and Azide free (ab251513)

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

This data was developed using ab209995, the same antibody clone in a different buffer formulation.
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.

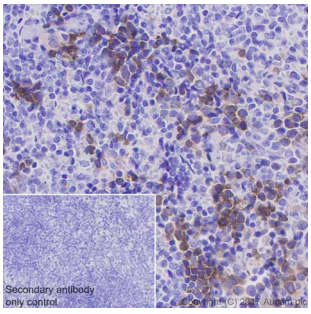
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-p53R2+RRM2 antibody [EPR20651] - BSA and Azide free (ab251513)

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

This data was developed using ab209995, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 80% 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] - BSA and Azide free (ab251513)

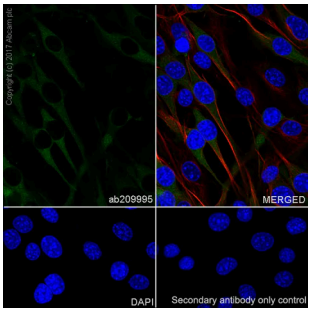
P53R2+RRM2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-p53R2+RRM2 antibody

This data was developed using ab209995, the same antibody clone in a different buffer formulation.

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] - BSA and Azide free (ab251513)

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

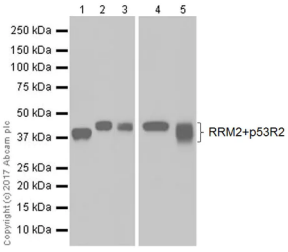
This data was developed using ab209995, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 100% methanol-fixed NIH/3T3 (mouse embryonic fibroblast) cells labeling RRM2+ p53R2 with ab209995 at 1/100 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) 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] - BSA and Azide free (ab251513)

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

This data was developed using ab209995, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

Exposure time: 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

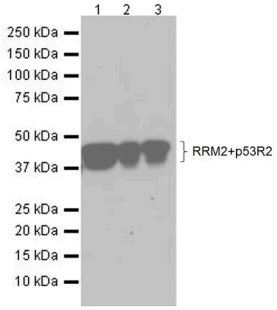
Lane 5:
U-2 OS (Human bone osteosarcoma epithelial cell) whole cell lysate at 10 µg

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] - BSA and Azide free (ab251513)

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

This data was developed using ab209995, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

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

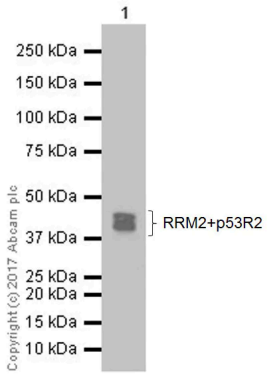
Secondary

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] - BSA and Azide free (ab251513)

This data was developed using ab209995, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

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

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

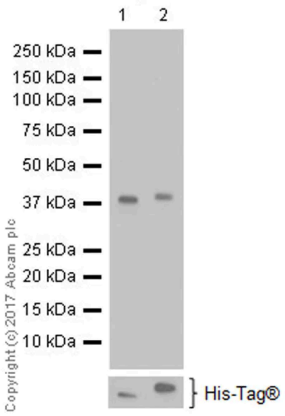
All lanes:
4T1 (mouse mammary gland carcinoma epithelial cell) whole cell lysate at 10 µg

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] - BSA and Azide free (ab251513)

This data was developed using ab209995, the same antibody clone in a different buffer formulation.
Blocking and 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'.