abcam

ab246550

Anti-p53 antibody [EPR20416-120]

Lab Essentials | 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, 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	EPR20416-120
Purification technique	Affinity purification Protein A
Concentration	0.691 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ChIC/CUT&RUN-seq

Not recommended

Species	Human, Mouse
Dilution info	-
Notes	-

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/60
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

Target data

See full target information Tp53

Function Multifunctional transcription factor that induces cell cycle arrest, DNA repair or apoptosis upon binding to its target DNA sequence (PubMed:19556538, PubMed:20673990, PubMed:22726440). Acts as a tumor suppressor in many tumor types; induces growth arrest or apoptosis depending on the physiological circumstances and cell type. Negatively regulates cell division by controlling expression of a set of genes required for this process. One of the activated genes is an inhibitor of cyclin-dependent kinases. Apoptosis induction seems to be mediated either by stimulation of BAX and FAS antigen expression, or by repression of Bcl-2 expression. Its pro-apoptotic activity is activated via its interaction with PPP1R13B/ASPP1 or TP53BP2/ASPP2 (By similarity). However, this activity is inhibited when the interaction with PPP1R13B/ASPP1 or TP53BP2/ASPP2

is displaced by PPP1R13L/iASPP (By similarity). In cooperation with mitochondrial PPIF is involved in activating oxidative stress-induced necrosis; the function is largely independent of transcription. Prevents CDK7 kinase activity when associated to CAK complex in response to DNA damage, thus stopping cell cycle progression (By similarity). Induces the transcription of long intergenic non-coding RNA p21 (lincRNA-p21) and lincRNA-Mkln1. LincRNA-p21 participates in TP53-dependent transcriptional repression leading to apoptosis, but seems to have to effect on cell-cycle regulation. Regulates the circadian clock by repressing CLOCK-BMAL1-mediated transcriptional activation of PER2 (PubMed:24051492).

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

	The protein p53 also known as TP53 or tumor protein p53 has a molecular weight of approximately 53 kDa. It acts as a transcription factor and plays a major role in cell cycle regulation apoptosis and maintaining genomic stability. This protein mainly expresses in the nucleus of cells and acts as a critical regulator of cellular responses to stress signals including DNA damage. Scientists commonly use p53 antibodies in various assays like western blot and p53 immunofluorescence to detect and study its expression and functional status in cells.
Biological function summary	P53 functions to control cell division and apoptosis serving as a guardian of the genome by preventing mutation accumulation. It does not form part of a larger complex under normal conditions but interacts with various other molecules to execute its functions. p53 can activate or suppress the transcription of numerous genes involved in cell cycle arrest DNA repair and programmed cell death allowing it to halt the progression of damaged cells and trigger repair mechanisms or eliminate those that cannot be repaired.
Pathways	P53 acts within several key biological pathways such as the p53 signaling pathway and the intrinsic apoptotic pathway. Its activity involves interaction with proteins like MDM2 which regulates p53 through ubiquitin-mediated degradation and ATM kinase which phosphorylates p53 in response to DNA damage. These interactions ensure appropriate cellular responses during stress and are vital for maintaining homeostasis.
Associated diseases and disorders	P53 mutation or inactivation is often associated with the development of cancer given its role in controlling cell division and preventing tumor formation. Specifically its dysfunction has been linked to cancers such as breast cancer and lung cancer. Additionally p53 can interact with other mutant proteins like Ras compounding mutations that contribute to tumor progression and aggressive cancer phenotypes. Understanding these interactions and the status of p53 can be important in developing targeted cancer therapies.

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

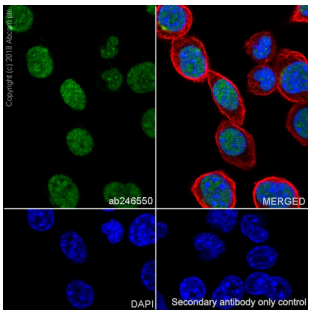
We do not recommend this combination. It is not covered by our product promise.

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.

6 product images

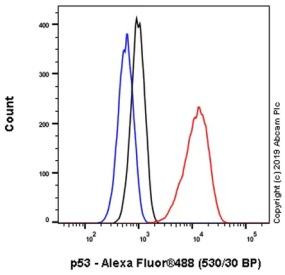


Immunocytochemistry/ Immunofluorescence - Anti-p53 antibody [EPR20416-120] (ab246550)

P53 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-p53 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized LLC1 (mouse lung carcinoma cell line) cells labeling p53 with ab246550 at 1/100 dilution followed by a Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing nuclear staining in LLC1 cells is observed.
The nuclear counter stain is DAPI (blue). Tubulin is detected with an Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

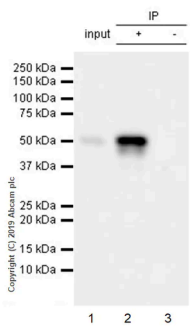
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-p53 antibody [EPR20416-120] (ab246550)

P53 Flow Cytometry (Intracellular) staining using rabbit Anti-p53 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized LLC1 (mouse lung carcinoma cell line) cell line labeling p53 with ab246550 at 1/60 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-p53 antibody [EPR20416-120] (ab246550)

p53 was immunoprecipitated from 0.35 mg of LLC1 (mouse lung carcinoma cell line) whole cell lysate with ab246550 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab246550 at 1/2000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/5000 dilution.
Lane 1: LLC1 whole cell lysate 10 µg (Input).

Lane 2: ab246550 IP in LLC1 whole cell lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab246550 in LLC1 whole cell lysate.

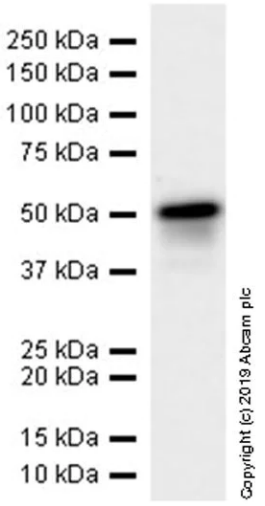
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 10 seconds.
All lanes:
Immunoprecipitation - Anti-p53 antibody [EPR20416-120] (ab246550)

Predicted band size: 43 kDa

Observed band size: 53 kDa

Western blot - Anti-p53 antibody [EPR20416-120] (ab246550)



P53 Western blot staining of LLC1 (mouse lung carcinoma cell line) whole cell lysate using rabbit Anti-p53 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID: 27702985).

All lanes:
Western blot - Anti-p53 antibody [EPR20416-120] (ab246550) at 1/1000 dilution

All lanes:
LLC1 (mouse lung carcinoma cell line) whole cell lysate at 10 µg

Secondary

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

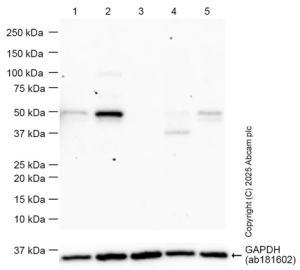
Developed using the ECL technique.

Predicted band size: 43 kDa

Observed band size: 53 kDa

Exposure time: 92s

Western blot - Anti-p53 antibody [EPR20416-120] (ab246550)



P53 Western blot staining using rabbit Anti-p53 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) 1:1,000,000 dilution

Low or negative sample: normal brain (PMID: 32778161); normal liver (PMID: 10949934); NIH/3T3 (PMID: 10628835).

All lanes:
Western blot - Anti-p53 antibody [EPR20416-120] (ab246550) at 1/1000 dilution

Lane 1:
Mouse spleen tissue lysate at 20 µg

Lane 2:
Mouse thymus tissue lysate at 20 µg

Lane 3:
Mouse brain tissue lysate at 20 µg

Lane 4:
Mouse liver tissue lysate at 20 µg

Lane 5:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

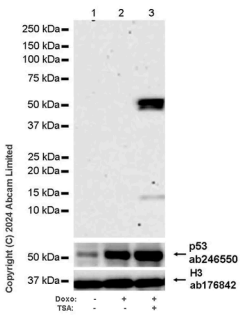
Secondary

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

Predicted band size: 53 kDa

Observed band size: 53 kDa

Exposure time: 180s



Western blot - Anti-p53 antibody [EPR20416-120] (ab246550)

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

The expression of acetyl p53 is upregulated in response to doxorubicin and TSA treatment (PMID: 15123817).

The identity of the lower MW band at approximately 15 kDa is unknown.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-p53 (acetyl K305 + K370 + K373) antibody [RM1200] (ab321819) at 1/1000 dilution

Lane 1:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

Lane 2:
NIH/3T3 treated with 0.5µM Doxorubicin (ab120629) for 24 hours whole cell lysate at 20 µg

Lane 3:
NIH/3T3 treated with 0.5µM Doxorubicin and 500ng/ml TSA(Trichostatin A) for 24 hours whole cell lysate at 20 µg

Secondary

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

Observed band size: 53 kDa, 36 kDa

Exposure time: 180s

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