abcam

ab321819

Anti-p53 (acetyl K305 + K370 + K373) antibody [RM1200]

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	Multiclonal
Immunogens	The exact immunogen used to generate this antibody is proprietary information.
Clone number	RM1200
Purification technique	Affinity purification Protein A
Specificity	Unsuitable for human IP.
Concentration	0.521 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Dot

Tested

Species	Synthetic peptide
Dilution info	1/1000

Notes	-

Expected

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

Not recommended

Species	Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Not recommended

Species	Synthetic peptide, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human

Dilution info	1/2000
Notes	-

Species	Mouse
Dilution info	1/2000
Notes	-

Not recommended

Species	Synthetic peptide, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	-

Species	Mouse
Dilution info	1/50
Notes	-

Not recommended

Species	Synthetic peptide, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Mouse
Dilution info	1/30

Notes	-

Not recommended

Species	Human, Synthetic peptide, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat, Synthetic peptide
Dilution info	-
Notes	-

Target data

See full target information TP53 acetyl K305 + K370 + K373

Function

Multifunctional transcription factor that induces cell cycle arrest, DNA repair or apoptosis upon binding to its target DNA sequence (PubMed:11025664, PubMed:12524540, PubMed:12810724, PubMed:15186775, PubMed:15340061, PubMed:17317671, PubMed:17349958, PubMed:19556538, PubMed:20673990, PubMed:20959462, PubMed:22726440, PubMed:24051492, PubMed:24652652, PubMed:35618207, PubMed:36634798, PubMed:38653238, PubMed:9840937). Acts as a tumor suppressor in many tumor types; induces growth arrest or apoptosis depending on the physiological circumstances and cell type (PubMed:11025664, PubMed:12524540, PubMed:12810724, PubMed:15186775, PubMed:15340061, PubMed:17189187, PubMed:17317671, PubMed:17349958, PubMed:19556538, PubMed:20673990, PubMed:20959462, PubMed:22726440, PubMed:24051492, PubMed:24652652, PubMed:38653238, PubMed:9840937). Negatively regulates cell division by controlling expression of a set of genes required for this process (PubMed:11025664, PubMed:12524540, PubMed:12810724, PubMed:15186775, PubMed:15340061, PubMed:17317671, PubMed:17349958, PubMed:19556538, PubMed:20673990, PubMed:20959462, PubMed:22726440, PubMed:24051492, PubMed:24652652, PubMed:9840937). 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 (PubMed:12524540, PubMed:17189187). Its pro-apoptotic activity is activated via its interaction with PPP1R13B/ASPP1 or TP53BP2/ASPP2 (PubMed:12524540). However, this activity is inhibited when the interaction with PPP1R13B/ASPP1 or TP53BP2/ASPP2 is displaced by PPP1R13L/iASPP (PubMed:12524540). In cooperation with mitochondrial PPIF is involved in activating oxidative stress-induced necrosis; the function is largely independent of

transcription. 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 and seems to have an effect on cell-cycle regulation. Implicated in Notch signaling cross-over. Prevents CDK7 kinase activity when associated to CAK complex in response to DNA damage, thus stopping cell cycle progression. Isoform 2 enhances the transactivation activity of isoform 1 from some but not all TP53-inducible promoters. Isoform 4 suppresses transactivation activity and impairs growth suppression mediated by isoform 1. Isoform 7 inhibits isoform 1-mediated apoptosis. Regulates the circadian clock by repressing CLOCK-BMAL1-mediated transcriptional activation of PER2 (PubMed:24051492).

Storage

Shipped at conditions	Blue Ice
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

What are recombinant multiclonals?
Recombinant multiclonals are a mixture of recombinant antibodies co-expressed from a library of heavy and light chains. They offer several advantages including:

- The sensitivity of polyclonal antibodies by recognising multiple epitopes
- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

View our range of recombinant multiclonal antibodies.

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.

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

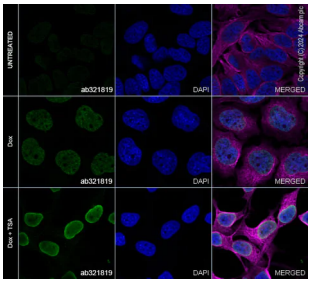
We do not recommend this combination. It is not covered by our product promise.

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.

8 product images



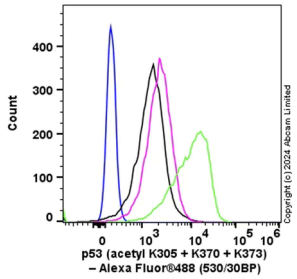
Immunocytochemistry/ Immunofluorescence - Anti-p53 (acetyl K305 + K370 + K373) antibody [RM1200] (ab321819)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells labelling p53 (acetyl K305 + K370 + K373) with ab321819 at 1/2000 (0.261 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/mL dilution (Green).

Confocal image showing increased nuclear staining in HeLa cells (shown in green) treated with Doxorubicin (0.5 µM) for 24 h and further increased signal treated with Doxorubicin (0.5 µM) and Trichostatin A (500 ng/mL) for 24 hr. The counterstain was observed in magenta. Nuclear DNA was labeled with DAPI (shown in blue). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Magenta). The Nuclear counterstain was DAPI (Blue).

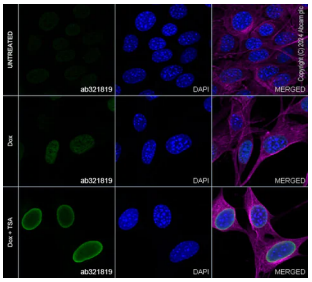
Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution.



Flow Cytometry (Intracellular) - Anti-p53 (acetyl K305 + K370 + K373) antibody [RM1200] (ab321819)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Untreated HeLa (human cervical adenocarcinoma epithelial cell) (Black) / HeLa treated with 0.5µM Doxorubicin for 24h (Megenta) / HeLa treated with 0.5µM Doxorubicin and 500ng/mL Trichostatin A for 24h (Green) cells labelling p53 (acetyl K305 + K370 + K373) with ab321819 at 1/50 dilution (1ug) / Black, Megenta and Green compared with a isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



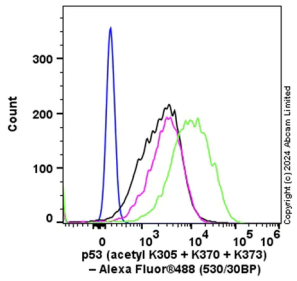
Immunocytochemistry/ Immunofluorescence - Anti-p53 (acetyl K305 + K370 + K373) antibody [RM1200] (ab321819)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labelling p53 (acetyl K305 + K370 + K373) with ab321819 at 1/2000 (0.261 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/mL dilution (Green).

Confocal image showing increased nuclear staining in NIH/3T3 cells (shown in green) treated with Doxorubicin (0.5 µM) for 24 h and further increased signal treated with Doxorubicin (0.5 µM) and Trichostatin A (500 ng/mL) for 24 hr. The counterstain was observed in magenta. Nuclear DNA was labeled with DAPI (shown in blue). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

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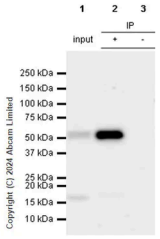
Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution.



Flow Cytometry (Intracellular) - Anti-p53 (acetyl K305 + K370 + K373) antibody [RM1200] (ab321819)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Untreated NIH/3T3 (mouse embryonic fibroblast) (Black) / NIH/3T3 treated with 0.5µM Doxorubicin for 24h (Megenta) / NIH/3T3 treated with 0.5µM Doxorubicin and 500ng/mL Trichostatin A for 24h (Green) cells labelling p53 (acetyl K305 + K370 + K373) with ab321819 at 1/50 dilution (1ug) / Black, Megenta and Green compared with a isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-p53 (acetyl K305 + K370 + K373) antibody [RM1200] (ab321819)

p53 (acetyl K305 + K370 + K373) was immunoprecipitated from 0.35 mg NIH/3T3 (mouse embryonic fibroblast) whole cell lysate with ab321819 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab321819 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: NIH/3T3 (mouse embryonic fibroblast) whole cell lysate
Lane 2: ab321819 IP in NIH/3T3 (mouse embryonic fibroblast) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab321819 in NIH/3T3 whole cell lysate

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

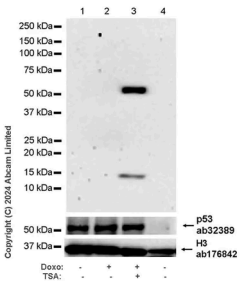
All lanes:
Immunoprecipitation - Anti-p53 (acetyl K305 + K370 + K373) antibody [RM1200] (ab321819) at 1/30 dilution

All lanes:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 24s



Western blot - Anti-p53 (acetyl K305 + K370 + K373) antibody [RM1200] (ab321819)

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

Negative control: Saos-2 (PMID: 25490093)

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:
Untreated HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate at 20 µg

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

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

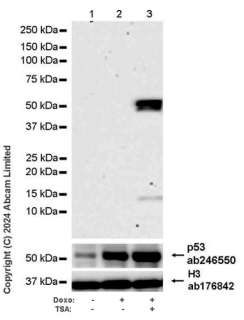
Lane 4:
Saos-2 (human osteosarcoma epithelial cell) whole cell lysate at 20 µg

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



Western blot - Anti-p53 (acetyl K305 + K370 + K373) antibody [RM1200] (ab321819)

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

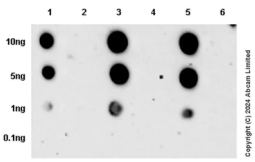
Lane 3:
NIH/3T3 treated with 0.5µM Doxorubicin and 500ng/ml TSA(Trichostatin A) for 24 hours whole cell lysate at 20 µg

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



Dot Blot - Anti-p53 (acetyl K305 + K370 + K373) antibody [RM1200] (ab321819)

Dot blot analysis of p53 (acetyl K305 + K370 + K373) using ab321819 at 1:1000 (0.521 ug/ml) followed by a Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1:100,000 dilution.

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

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

Lane 1:
Human p53 (acetyl K305) peptide

Lanes 2, 4 and 6:
Human p53 non-acetyl peptide

Lane 3:
Human p53 (acetyl K370) peptide

Lane 5:
Human p53 (acetyl K373) peptide

Secondary

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

Exposure time: 180s

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