abcam

ab243868

Anti-53BP1 antibody [BL-250-1H11]

Recombinant

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.8 - 8.6 Preservative: 0.09% Sodium azide Constituents: 98% Borate buffered saline, 0.1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human TP53BP1 aa 350 to C-terminus. The exact immunogen used to generate this antibody is proprietary information. Database link Q12888
Clone number	BL-250-1H11
Purification notes	Recombinant antibody was purified from cell culture supernatant.

Reactivity data

IP

Tested

Species	Human
Dilution info	-
Notes	Use 20µl/mg lysate.

Expected

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

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/100 - 1/500
Notes	Epitope retrieval with citrate buffer pH6.0 is recommended for Formalin-fixed, paraffin-embedded tissue sections

Expected

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

Flow Cyt

Tested

Species	Human
Dilution info	1 µL for 10^6 Cells
Notes	-

Species	Mouse
Dilution info	1 µL for 10^6 Cells
Notes	-

Target data

See full target information TP53BP1

Function

Double-strand break (DSB) repair protein involved in response to DNA damage, telomere dynamics and class-switch recombination (CSR) during antibody genesis (PubMed:12364621, PubMed:17190600, PubMed:21144835, PubMed:22553214, PubMed:23333306, PubMed:27153538, PubMed:28241136, PubMed:31135337, PubMed:37696958). Plays a key role in the repair of double-strand DNA breaks (DSBs) in response to DNA damage by promoting non-homologous end joining (NHEJ)-mediated repair of DSBs and specifically counteracting the function of the homologous recombination (HR) repair protein BRCA1 (PubMed:22553214, PubMed:23333306, PubMed:23727112, PubMed:27153538, PubMed:31135337). In response to DSBs, phosphorylation by ATM promotes interaction with RIF1 and dissociation from NUDT16L1/TIRR, leading to recruitment to DSBs sites (PubMed:28241136). Recruited to DSBs sites by recognizing and binding histone H2A monoubiquitinated at 'Lys-15' (H2AK15Ub) and histone H4 dimethylated at 'Lys-20' (H4K20me2), two histone marks that are present at DSBs sites (PubMed:17190600, PubMed:23760478, PubMed:27153538, PubMed:28241136). Required for immunoglobulin class-switch recombination (CSR) during antibody genesis, a process that involves the generation of DNA DSBs (PubMed:23345425). Participates in the repair and the orientation of the broken DNA ends during CSR (By similarity). In contrast, it is not required for classic NHEJ and V(D)J recombination (By similarity). Promotes NHEJ of dysfunctional telomeres via interaction with PAXIP1 (PubMed:23727112).

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	+4°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

REACH authorisation
Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances.
It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

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Supplementary info

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

Activity summary	53BP1 also known as p53-binding protein 1 is a protein that plays an important role in DNA damage response. The 53BP1 protein has a molecular weight of approximately 213 kDa. It is a nuclear protein and it mainly expresses in cells during the DNA damage repair processes. Researchers commonly utilize immunofluorescence and anti-53BP1 antibodies to detect its presence especially for studying DNA repair mechanisms. 53BP1 proves important for maintenance of genomic stability.
Biological function summary	As a DNA damage response mediator 53BP1 functions to recognize and bind to sites of double-strand breaks in DNA promoting non-homologous end joining (NHEJ). This protein is a component of a larger protein complex that recruits factors necessary for DNA repair. Its interaction with DNA lesions also involves chromatin remodeling aiming to facilitate successful repair of the DNA. 53BP1 works in concert with other proteins such as H2AX and MDC1.
Pathways	Researchers observe 53BP1 in processes such as the DNA damage checkpoint and repair pathways. This protein significantly contributes to the pathways involved in maintaining cell cycle checkpoints. It interacts with proteins like ATM and BRCA1 coordinating the cellular response to DNA damage and ensuring that genomic integrity checks occur properly before cell cycle progression continues. These interactions place 53BP1 at a pivotal position in decision-making between repair pathways.
Associated diseases and disorders	Researchers often focus on 53BP1's involvement in cancer development and therapy resistance due to its role in DNA repair. Alterations or deficiencies in 53BP1 levels can contribute to increased susceptibility to tumor development affecting processes like breast cancer and ovarian cancer through its relationship with BRCA1. The improper function of 53BP1 in DNA repair pathways may lead to an

accumulation of genetic mutations driving tumorigenesis and impacting the efficacy of certain cancer treatments.

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

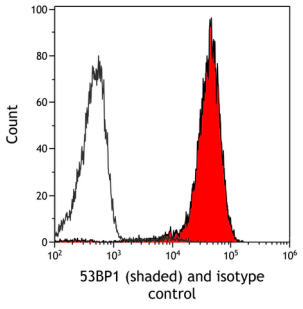
We do not recommend this combination. It is not covered by our product promise.

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.

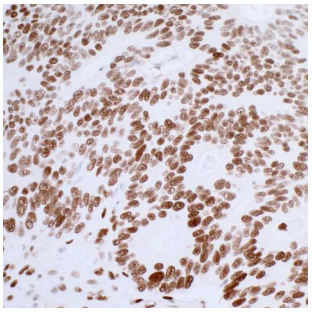
Full details and terms and conditions can be found here:
Terms & Conditions.

7 product images



Flow Cytometry - Anti-53BP1 antibody [BL-250-1H11] (ab243868)

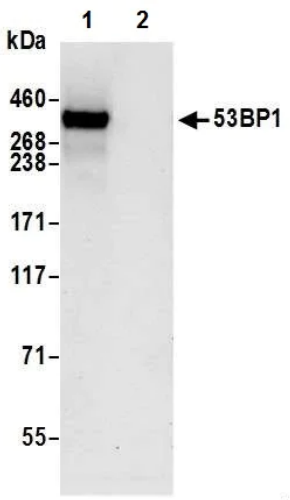
Flow cytometry overlay histogram of 4% formaldehyde fixed HDLM-2 cells permeabilized with 90% methanol labeling human 53BP1 with ab243868 at 1 µl per 1 x 10^6 cells. (shaded) compared with a Isotype control (unshaded). Secondary antibody details, Goat Anti-Rabbit IgG H&L (DyLight® 650) (ab96886)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-53BP1 antibody [BL-250-1H11] (ab243868)

53BP1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-53BP1 antibody

Formalin-fixed, paraffin-embedded human colon carcinoma tissue stained using ab243868 at 1/250 dilution in immunohistochemical analysis. A HRP-conjugated goat anti-rabbit IgG was used as the secondary. DAB staining.



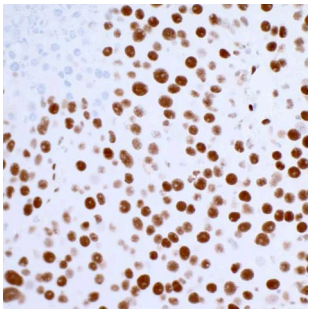
Immunoprecipitation - Anti-53BP1 antibody [BL-250-1H11] (ab243868)

53BP1 was immunoprecipitated from 1 mg HEK-293T whole cell lysate with ab243868 at 20 µl per reaction Western blot was performed on the immunoprecipitate using ab243868 at 1/1000 dilution. Lane 1: ab243868 IP in HEK-293T cell lysate.
Lane 2: Contol IgG in HEK-293T cell lysate.

Detection: Chemiluminescence with an exposure time of 10 seconds.

All lanes:
Immunoprecipitation - Anti-53BP1 antibody [BL-250-1H11] (ab243868)

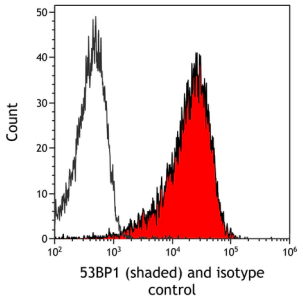
Predicted band size: 214 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-53BP1 antibody [BL-250-1H11] (ab243868)

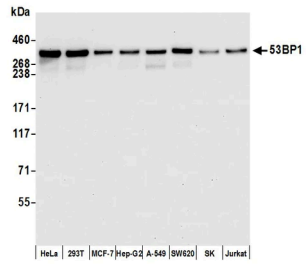
53BP1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-53BP1 antibody

Formalin-fixed, paraffin-embedded mouse renal cell carcinoma stained using ab243868 at 1/250 dilution in immunohistochemical analysis. A HRP-conjugated goat anti-rabbit IgG was used as the secondary. DAB staining.



Flow Cytometry - Anti-53BP1 antibody [BL-250-1H11] (ab243868)

Flow cytometry overlay histogram of 4% formaldehyde fixed mIMCD-3 cells permeabilized with 90% methanol labeling human 53BP1 with ab243868 at 1 µl per 1 x 10^6 cells. (shaded) compared with a Isotype control (unshaded). Secondary antibody details, Goat Anti-Rabbit IgG H&L (DyLight® 650) (ab96886).



Western blot - Anti-53BP1 antibody [BL-250-1H11] (ab243868)

All lanes:
Western blot - Anti-53BP1 antibody [BL-250-1H11] (ab243868) at 1/1000 dilution

Lane 1:
HeLa whole cell lysate at 15 µg

Lane 2:
HEK293T whole cell lysate at 15 µg

Lane 3:
MCF-7 whole cell lysate at 15 µg

Lane 4:
Hep-G2 whole cell lysate at 15 µg

Lane 5:
A-549 whole cell lysate at 15 µg

Lane 6:
SW620 whole cell lysate at 15 µg

Lane 7:
SK-MEL-28 whole cell lysate at 15 µg

Lane 8:
Jurkat whole cell lysate at 15 µg

Secondary

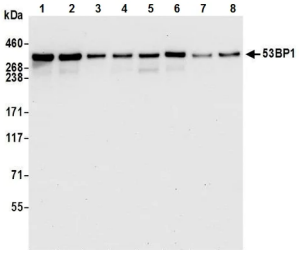
All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051)

Developed using the ECL technique.

Predicted band size: 213 kDa

Observed band size: 350 kDa

Exposure time: 10s



Western blot - Anti-53BP1 antibody [BL-250-1H11] (ab243868)

53BP1 Western blot staining using rabbit Anti-53BP1 antibody

Western blot analysis using ab243868 at 1/1000 dilution.
Lane 1: HeLa whole cell lysate (15 µg).

Lane 2: HEK-293T whole cell lysate (15 µg).

Lane3: MCF7 whole cell lysate (15 µg).

Lane 4: HepG2 whole cell lysate (15 µg).

Lane 5: A549 whole cell lysate (15 µg).

Lane 6: SW620 whole cell lysate (15 µg).

Lane 7: SK whole cell lysate (15 µg).

Lane 8: Jurkat whole cell lysate (15 µg).

A HRP-conjugated goat anti-rabbit IgG antibody was used as the secondary. Detection: chemiluminescence with an exposure time of 10 seconds

All lanes:
Western blot - Anti-53BP1 antibody [BL-250-1H11] (ab243868)

Predicted band size: 214 kDa

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