abcam

ab16895

Anti-MDM2 antibody [2A10]

Anti-MDM2 antibody [2A10] (ab16895) is a mouse monoclonal antibody detecting MDM2 in **Western Blot, Flow Cytometry, IHC-P, ICC/IF**. Suitable for **Human**.

- Over 110 publications
- Trusted since 2005

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.05% Sodium azide Constituents: Tris glycine, 0.88% Sodium chloride
Form	Liquid
Clonality	Monoclonal
Immunogen	Full Length Protein corresponding to Human MDM2 aa 250 to C-terminus. The exact immunogen used to generate this antibody is proprietary information. Database link Q00987
Clone number	2A10
Purity	Tissue culture supernatant
Specificity	Recognizes the ~90 kDa (apparent MW) MDM2 protein in A549 cells.
Epitope	Within amino acids 294-339.
Purification notes	Purified from TCS.

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

ICC

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-

Notes	-

Target data

See full target information MDM2

Function	E3 ubiquitin-protein ligase that mediates ubiquitination of p53/TP53, leading to its degradation by the proteasome (PubMed:29681526). Inhibits p53/TP53- and p73/TP73-mediated cell cycle arrest and apoptosis by binding its transcriptional activation domain. Also acts as a ubiquitin ligase E3 toward itself and ARRB1. Permits the nuclear export of p53/TP53. Promotes proteasome-dependent ubiquitin-independent degradation of retinoblastoma RB1 protein. Inhibits DAXX-mediated apoptosis by inducing its ubiquitination and degradation. Component of the TRIM28/KAP1-MDM2-p53/TP53 complex involved in stabilizing p53/TP53. Also a component of the TRIM28/KAP1-ERBB4-MDM2 complex which links growth factor and DNA damage response pathways. Mediates ubiquitination and subsequent proteasome degradation of DYRK2 in nucleus. Ubiquitinates IGF1R and SNAI1 and promotes them to proteasomal degradation (PubMed:12821780, PubMed:15053880, PubMed:15195100, PubMed:15632057, PubMed:16337594, PubMed:17290220, PubMed:19098711, PubMed:19219073, PubMed:19837670, PubMed:19965871, PubMed:20173098, PubMed:20385133, PubMed:20858735, PubMed:22128911). Ubiquitinates DCX, leading to DCX degradation and reduction of the dendritic spine density of olfactory bulb granule cells (By similarity). Ubiquitinates DLG4, leading to proteasomal degradation of DLG4 which is required for AMPA receptor endocytosis (By similarity). Negatively regulates NDUFS1, leading to decreased mitochondrial respiration, marked oxidative stress, and commitment to the mitochondrial pathway of apoptosis (PubMed:30879903). Binds NDUFS1 leading to its cytosolic retention rather than mitochondrial localization resulting in decreased supercomplex assembly (interactions between complex I and complex III), decreased complex I activity, ROS production, and apoptosis (PubMed:30879903).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	Up to 12 months
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Do Not Freeze

Notes

What is this antibody validated in?
Anti-MDM2 antibody [2A10] (ab16895) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

What is the molecular weight of MDM2?
Anti-MDM2 [2A10] (ab16895) specifically detects a band for MDM2 (UniProt: Q00987) at a molecular weight of 55kDa.

Trusted by the scientific community
Anti-MDM2 [2A10] (ab16895) was first used in a scientific publication in 2005 and has been cited over 110 times in peer-reviewed journals.

Reviewed by scientists
Anti-MDM2 [2A10] (ab16895) has over 5 independent reviews from customers.

Supplementary info

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

Activity summary	MDM2 also known as murine double minute 2 is an important regulator of the p53 tumor suppressor protein. It functions as an E3 ubiquitin ligase targeting p53 for proteasomal degradation. The MDM2 protein has a molecular weight of approximately 55 kDa. It is expressed in various human tissues with higher levels in rapidly dividing cells. MDM2 interacts through its N-terminal domain with the transactivation domain of p53 inhibiting its transcriptional activity.
Biological function summary	The MDM2 protein plays a central role in cell cycle control and apoptosis regulation. It forms a complex with p53 which modulates p53's stability and activity. By binding to p53 MDM2 prevents p53 from inducing cell cycle arrest or apoptosis in response to DNA damage or oncogenic signals. Its interaction allows cells to proliferate even in the presence of potential growth-arrest signals maintaining homeostasis under normal physiological conditions.
Pathways	MDM2 and p53 form a critical axis within the DNA damage response and tumorigenesis pathways. The p53-MDM2 feedback loop is a well-studied mechanism that balances cell survival and death. When DNA damage occurs p53 gets activated and in turn upregulates MDM2 expression creating a feedback loop. Other proteins like ARF also interact with MDM2 inhibiting its activity towards p53 and thereby enhancing p53 function during cellular stress.
Associated diseases and disorders	Mutations or overexpression of the MDM2 protein are often associated with various cancers including sarcoma and breast cancer. In these cancers MDM2 amplification leads to enhanced degradation of p53 resulting in unchecked cell proliferation. MDM2's involvement in these pathologies highlights its potential as a therapeutic target with inhibitors like Nutlin-3 being developed to disrupt the MDM2-p53 interaction. The relationship between MDM2 and other proteins such as HDM201 in the context of p53 alterations further highlights its importance in cancer biology.

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

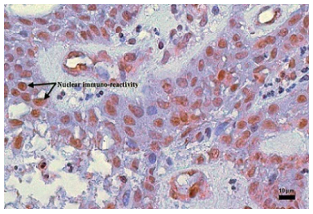


Image from Udeabor, Samuel Ebele et al. The Pan African Medical Journal 20 (2015): 140. doi:10.11604/pamj.2015.20. Fig 4. Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MDM2 antibody [2A10] (ab16895)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of ameloblastoma tissue sections labeling MDM2 with ab16895. The sections were de-paraffinized, hydrated and then rinsed in phosphate-buffered solution (PBS). They were immersed in heat-induced epitope retrieval citrate buffer of concentration 15mMol and pH 6.0, diluted 1/10 with distilled water and incubated at 95°C for 10 minutes. They were then placed in fresh citrate, cooled in water for 20 minutes and then rinsed in PBS for 6 minutes. Peroxidase blocking reagent was added to each section for 5 minutes, and the sections were rinsed in 0.1% PBS for 6 minutes. The specimen were incubated for 30 minutes with 1/100 dilution of Anti-MDM2 antibody [2A10] (ab16895), then rinsed with PBS, followed by incubation with undiluted HRP for 20 minutes. 1ml of diaminobenzidine solution was added to cover the specimen, followed by incubation in a humidity chamber for 15 minutes. The sections were then immersed in aqueous haematoxylin and rinsed in distilled water for 5 minutes. The tissue was dehydrated and subsequently rinsed with xylene. Distyrene plasticizer in xylene mounting fluid was then applied, and a cover slip placed. Hematoxylin and eosin staining.
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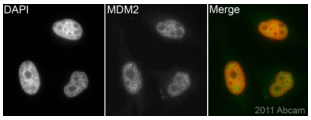
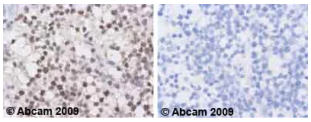


Image courtesy of a customer review submitted by Dr. Kirk McManus, Univ. of Manitoba/Cancer Care MICB, Canada

Immunocytochemistry - Anti-MDM2 antibody [2A10] (ab16895)

MDM2 Immunocytochemistry staining using mouse Anti-MDM2 antibody

ab16895 (1/200) staining MDM2 in assynchronous HeLa cells (green). Cells were fixed with paraformaldehyde, permeabilized with 0.5% Triton X100 and counterstained with DAPI in order to highlight the nucleus (red). Please refer to Abreview for further experimental details.
This image was generated using the ascites version of the product.



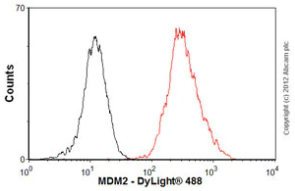
Please note: for manual staining we recommend to optimize primary antibody concentration and incubation time (overnight incubation); amplification may be required.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MDM2 antibody [2A10] (ab16895)

MDM2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-MDM2 antibody

ab16895 staining Human normal tonsil. Staining is localised to nuclear + cytoplasmic compartments. Left panel: with primary antibody at 1 µg/ml. Right panel: isotype control. Sections were stained using an automated system DAKO Autostainer Plus, at RT: sections were rehydrated and antigen retrieved with the Dako 3 in 1 AR buffers citrate pH6.1 in a DAKO PT Link. Slides were peroxidase blocked in 3% H2O2 in methanol for 10 min. They were then blocked with Dako Protein block for 10 min (containing casein 0.25% in PBS) , incubated with primary antibody for 20 min and detected with Dako envision flex amplification kit for 30 min. Colorimetric detection was completed with DAB for 5 min. Slides were counterstained with Haematoxylin and coverslipped under DePeX.

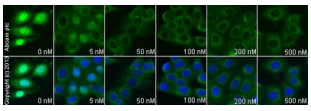
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Flow Cytometry - Anti-MDM2 antibody [2A10] (ab16895)

MDM2 Flow Cytometry staining using mouse Anti-MDM2 antibody

Overlay histogram showing HeLa cells stained with ab16895 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum (ab7481) / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab16895, 0.5µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2a [ICIGG2A] (ab91361, 1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.
This image was generated using the ascites version of the product.

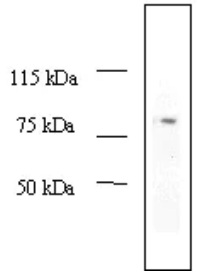


Immunocytochemistry/ Immunofluorescence - Anti-MDM2 antibody [2A10] (ab16895)

MDM2 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-MDM2 antibody

ab16895 staining MDM2 in MCF7 cells treated with progesterone (ab141252), by ICC/IF. Decrease in MDM2 expression correlates with increased concentration of progesterone, as described in literature.
The cells were incubated at 37°C for 24 hour in media containing different concentrations of ab141252 (progesterone) in DMSO, fixed with 4% formaldehyde for 10 minutes at room

temperature and blocked with PBS containing 10% goat serum, 0.3 M glycine, 1% BSA and 0.1% tween for 2h at room temperature. Staining of the treated cells with ab16895 (5 µg/ml) was performed overnight at 4°C in PBS containing 1% BSA and 0.1% tween. A DyLight 488 anti-mouse polyclonal antibody (ab96879) at 1/250 dilution was used as the secondary antibody. Nuclei were counterstained with DAPI and are shown in blue.
This image was generated using the ascites version of the product.



Western blot - Anti-MDM2 antibody [2A10] (ab16895)

MDM2 Western blot staining of A549 whole cell lysate using mouse Anti-MDM2 antibody

Detection: chemiluminescence.
This image was generated using the ascites version of the product.

All lanes:
Western blot - Anti-MDM2 antibody [2A10] (ab16895) at 2 µg/mL

All lanes:
A549 whole cell lysate

Predicted band size: 55 kDa

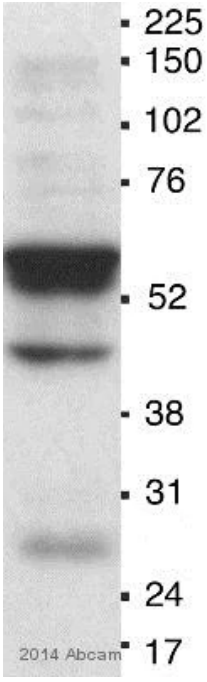


Image is courtesy of an anonymous customer review

Western blot - Anti-MDM2 antibody [2A10] (ab16895)

MDM2 Western blot staining of Mouse Liver lysate using mouse Anti-MDM2 antibody

This image was generated using the ascites version of the product.
All lanes:
Western blot - Anti-MDM2 antibody [2A10] (ab16895) at 1/1000 dilution

All lanes:
Mouse Liver lysate at 40 µg

Secondary

All lanes:
Donkey anti-mouse IgG (HRP) at 1/10000 dilution

Performed under reducing conditions.

Predicted band size: 55 kDa

Observed band size: 55 kDa

Exposure time: 1min

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