abcam

ab224274

Anti-MBD2 antibody [EPR18361] - BSA and Azide free

Recombinant | RabMAb | KO Validated

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	EPR18361
Purification technique	Affinity purification Protein A
Concentration	1.08 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	-

Notes	-

Expected

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

WB

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

IHC-P

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Target data

See full target information MBD2

Function Binds CpG islands in promoters where the DNA is methylated at position 5 of cytosine within CpG dinucleotides (PubMed:9774669). Binds hemimethylated DNA as well (PubMed:10947852, PubMed:24307175). Recruits histone deacetylases and DNA methyltransferases to chromatin (PubMed:10471499, PubMed:10947852). Acts as a component of the histone deacetylase NuRD complex which participates in the remodeling of chromatin (PubMed:16428440, PubMed:28977666). Acts as a transcriptional repressor and plays a role in gene silencing (PubMed:10471499, PubMed:10947852, PubMed:16415179). Functions as a scaffold protein, targeting GATAD2A and GATAD2B to chromatin to promote repression (PubMed:16415179). May enhance the activation of some unmethylated cAMP-responsive promoters (PubMed:12665568).

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

ab224274 is the carrier-free version of ab188474.

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	MBD2 also known as methyl-CpG-binding domain protein 2 is a protein with a molecular mass of about 45 kDa. This protein binds to methylated DNA specifically at CpG islands and plays a role in gene silencing. MBD2 is expressed in various tissues throughout the body including the brain liver and spleen. It contains a methyl-CpG-binding domain which facilitates its interaction with methylated DNA sequences influencing the transcription of particular genes.

Biological function summary	MBD2 functions as a transcriptional repressor. It is part of the MeCP1 complex which includes proteins such as MTA2 and HDAC1. This complex remodels chromatin structure to suppress gene expression. MBD2's ability to recruit chromatin remodeling enzymes allows it to modulate access to the underlying DNA affecting the gene activity and playing a role in cellular differentiation and development.
Pathways	The role of MBD2 is particularly important in DNA methylation and chromatin modification pathways. It interacts with the DNA methylation machinery influencing epigenetic regulation. MBD2 works closely with other proteins like MeCP2 which shares similar binding properties to control gene expression through epigenetic mechanisms. These interactions highlight its role in modulating cellular function and responding to changes in the cellular environment.
Associated diseases and disorders	Alterations in MBD2 have been linked to various cancers and neurological disorders. MBD2 deregulation affects pathways involved in tumor suppression and its overexpression has been noted in certain aggressive forms of cancer. In the context of neurological disorders MBD2 together with its related protein MeCP2 is implicated in conditions like Rett syndrome. Understanding the role of MBD2 in these diseases offers potential therapeutic avenues in targeting epigenetic modifications for treatment.

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

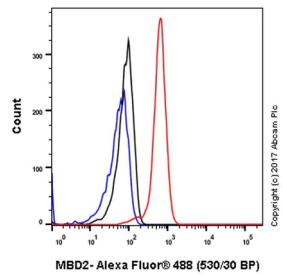
We do not recommend this combination. It is not covered by our product promise.

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.

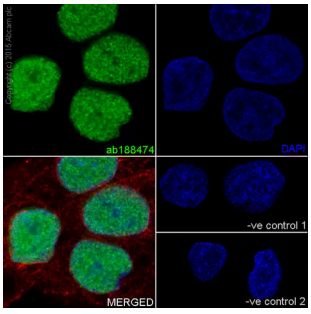
8 product images



Flow Cytometry (Intracellular) - Anti-MBD2 antibody [EPR18361] - BSA and Azide free (ab224274)

MBD2 Flow Cytometry (Intracellular) staining using rabbit Anti-MBD2 antibody

Intracellular Flow Cytometry analysis of HepG2 (human hepatocellular carcinoma) cells labeling MBD2 with purified ab188474 at 1/70 (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) (ab150077) (1/2000 dilution) was used as the secondary antibody. Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab188474).



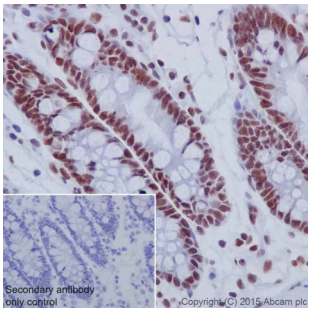
Immunocytochemistry/ Immunofluorescence - Anti-MBD2 antibody [EPR18361] - BSA and Azide free (ab224274)

MBD2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-MBD2 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HepG2 (Human liver hepatocellular carcinoma cell line) cells labeling MBD2 with ab188474 at 1/250 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing nuclear staining on HepG2 cell line. The nuclear counter stain is DAPI (blue).
Tubulin is detected with Anti-alpha Tubulin mouse MAb (ab7291) at 1/1000 dilution, followed by Goat Anti-Mouse (AlexaFluor®594) (ab150120) secondary antibody at 1/1000 dilution (red).

The negative controls are as follows:
-ve control 1: ab188474 at 1/250 dilution, followed by Goat Anti-Mouse (AlexaFluor®594) (ab150120) secondary antibody at 1/1000 dilution.
-ve control 2: ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab188474).



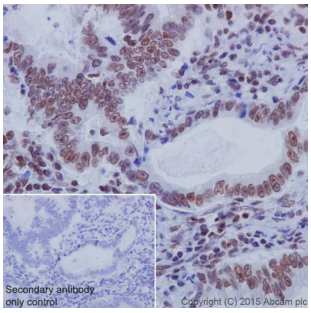
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MBD2 antibody [EPR18361] - BSA and Azide free (ab224274)

MBD2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MBD2 antibody

Immunohistochemical analysis of paraffin-embedded human colon tissue labeling MBD2 with ab188474 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Nuclear staining on human colon tissue tissue is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab188474).

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



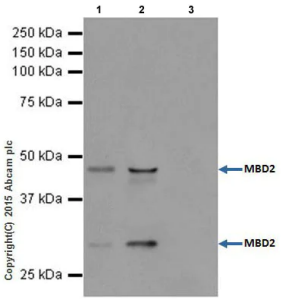
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MBD2 antibody [EPR18361] - BSA and Azide free (ab224274)

MBD2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MBD2 antibody

Immunohistochemical analysis of paraffin-embedded human gastric cancer tissue labeling MBD2 with ab188474 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Nuclear staining on human gastric cancer tissue is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab188474).

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

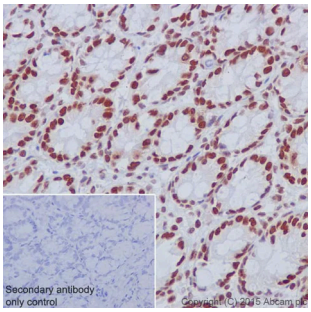


Immunoprecipitation - Anti-MBD2 antibody [EPR18361] - BSA and Azide free (ab224274)

MBD2 was immunoprecipitated from 1mg of HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate with ab188474 at 1/50 dilution. Western blot was performed from the immunoprecipitate using ab188474 at 1/1000 dilution. Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG was used as secondary antibody at 1/1500 dilution.
Lane 1: HeLa whole cell lysate 10µg (Input).
Lane 2: ab188474 IP in HeLa whole cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab188474 in HeLa whole cell lysate.
Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 3 seconds.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab188474).

All lanes:
Immunoprecipitation - Anti-MBD2 antibody [EPR18361] (ab188474)

Predicted band size: 43 kDa



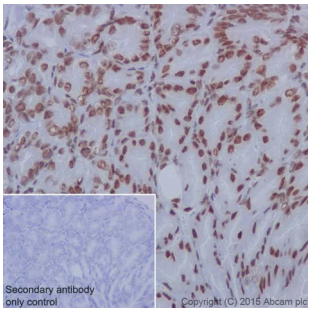
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MBD2 antibody [EPR18361] - BSA and Azide free (ab224274)

MBD2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MBD2 antibody

Immunohistochemical analysis of paraffin-embedded rat colon tissue labeling MBD2 with ab188474 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Nuclear staining on rat colon tissue is observed. Counter stained with Hematoxylin. Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab188474).

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



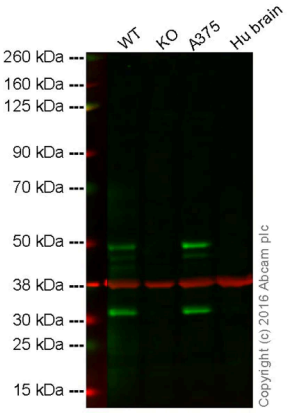
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MBD2 antibody [EPR18361] - BSA and Azide free (ab224274)

MBD2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MBD2 antibody

Immunohistochemical analysis of paraffin-embedded mouse stomach tissue labeling MBD2 with ab188474 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Nuclear staining on mouse stomach tissue is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab188474).

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



Western blot - Anti-MBD2 antibody [EPR18361] - BSA and Azide free (ab224274)

MBD2 Western blot staining using rabbit Anti-MBD2 antibody

This WB data was generated using the same anti-MBD2 antibody clone [EPR18361] in a different buffer formulation (cat# ab188474).
Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: MBD2 knockout HAP1 cell lysate (20 µg)
Lane 3: A375 cell lysate (20 µg)
Lane 4: Human brain tissue lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab188474 observed at 32 & 49 kDa. Red - loading control, ab8245, observed at 37 kDa.
ab188474 was shown to specifically react with MBD2 when MBD2 knockout samples were used. Wild-type and MBD2 knockout samples were subjected to SDS-PAGE. ab188474 and ab8245

(loading control to GAPDH) were diluted 1/1000 and 1/10000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10000 dilution for 1 h at room temperature before imaging.
All lanes:
Western blot - Anti-MBD2 antibody [EPR18361] (ab188474)

Predicted band size: 43 kDa

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