abcam

ab315462

Anti-MBD4/MED1 antibody [EPR28263-16]

Recombinant | RabMAb | KO Validated | 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	EPR28263-16
Purification technique	Affinity purification Protein A
Concentration	0.513 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information MBD4

Function	Mismatch-specific DNA N-glycosylase involved in DNA repair. Has thymine glycosylase activity and is specific for G:T mismatches within methylated and unmethylated CpG sites. Can also remove uracil or 5-fluorouracil in G:U mismatches. Has no lyase activity. Was first identified as methyl-CpG-binding protein.

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 MBD4 protein also known as MED1 is essential in DNA repair and gene regulation. MBD4 contains a methyl-CpG-binding domain allowing it to bind specifically to methylated DNA. The protein has a molecular weight of about 63 kDa. It is expressed in various tissues with higher levels in bone marrow and lymphoid tissues. MBD4 can recognize and excise mismatched T/G base pairs at methylated CpG sites which is important for maintaining genomic stability.
Biological function summary	MBD4 participates in the protection of genome integrity. It is involved in the DNA demethylation process ensuring proper gene expression patterns. MBD4 functions as part of complex DNA repair machinery. By working with other repair proteins MBD4 facilitates the correction of errors arising during DNA replication and demethylation reducing the risk of mutation accumulation and genomic instability.
Pathways	MBD4 plays a significant role in the base excision repair (BER) pathway. This pathway is key for correcting DNA damage caused by deamination and other forms of DNA alteration. In the BER pathway MBD4 cooperates with proteins like DNA glycosylases to identify and remove incorrect bases from the DNA strand. MBD4 also interacts with transcriptional regulation pathways influencing how genes are expressed in response to changes in the epigenetic landscape.
Associated diseases and disorders	The malfunction of MBD4 links to colorectal cancer and other forms of cancer. Deficiency or mutations in the MBD4 gene increase the likelihood of mutation accumulation leading to tumorigenesis. MBD4's interactions with other proteins involved in DNA repair such as MLH1 highlight its role in maintaining DNA integrity. Genetic instability from impaired MBD4 function could trigger or exacerbate progression of cancerous conditions.

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

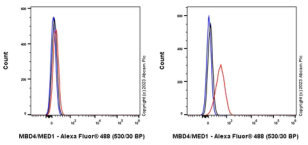
We do not recommend this combination. It is not covered by our product promise.

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.

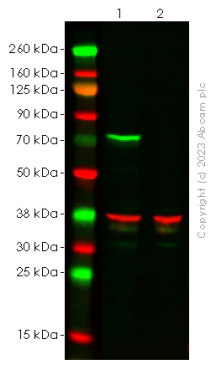
3 product images



Flow Cytometry (Intracellular) - Anti-MBD4/MED1 antibody [EPR28263-16] (ab315462)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized MBD4 KO HeLa (human MBD4 knockout cervical adenocarcinoma epithelial cell, Left) / Parental HeLa (Right) cells labelling MBD4/MED1 with ab315462 at 1/50 dilution (1 ug)/Red compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

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



Western blot - Anti-MBD4/MED1 antibody [EPR28263-16] (ab315462)

MBD4/MED1 Western blot staining using rabbit Anti-MBD4/MED1 antibody

Western blot: Anti-MBD4 antibody (ab315462) staining at 1/1000 dilution, shown in green; Mouse anti-GAPDH antibody 6C5 loading control (ab8245) staining at 1/20000 dilution, shown in red.

In Western blot, ab315462 was shown to bind specifically to MBD4. Target of interest was observed at 75 kDa in wild-type HeLa cell lysates (lane 1) with no signal observed at this size in MBD4 knockout cell line (lane 2, knockout cell line ab264937/ knockout cell lysate ab258960). To generate this image, samples were first run on an SDS-PAGE gel then transferred onto an immobilon-FL PVDF membrane. Membranes were blocked in a fluorescent western blot (TBS-based) blocking solution before incubation with primary antibodies overnight at 4 °C. Blots were washed in TBS-T, incubated with secondary antibodies Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution for 1 h at room temperature, washed again then imaged.

Lysate was freshly made and used for Western blotting immediately to minimize protein degradation.

All lanes:
Western blot - Anti-MBD4/MED1 antibody [EPR28263-16] (ab315462) at 1/1000 dilution

Lane 1:
Wild type HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
MBD4 knockout HeLa whole cell lysate at 20 µg

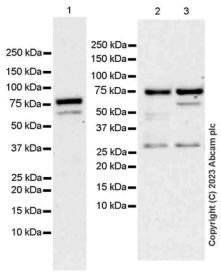
Secondary

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

Performed under reducing conditions.

Observed band size: 75 kDa, 36 kDa

Exposure time: 180s



Western blot - Anti-MBD4/MED1 antibody [EPR28263-16] (ab315462)

MBD4/MED1 Western blot staining using rabbit Anti-MBD4/MED1 antibody

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

Lysates were freshly made and used immediately to minimize protein degradation.

The band below 75 kDa may be caused by degradation.

The identity of the lower MW band at approximately 25 kDa is unknown.

All lanes:
Western blot - Anti-MBD4/MED1 antibody [EPR28263-16] (ab315462) at 1/1000 dilution

Lane 1:
293T (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 2:
THP-1 (human monocytic leukemia monocyte) whole cell lysate at 20 µg

Lane 3:
Jurkat (human T cell leukemia T lymphocyte) 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: 75 kDa

Exposure time: 180s

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