abcam

Product datasheet

Anti-MBD2 + MBD3 antibody [106B691] ab45027

★★★★★ 1 Abreviews 10 References 4 Images

Overview

Product name	Anti-MBD2 + MBD3 antibody [106B691]
Description	Mouse monoclonal [106B691] to MBD2 + MBD3
Host species	Mouse
Tested applications	**Suitable for:** IHC-P, Flow Cyt (Intra), ICC/IF, WB
Species reactivity	**Reacts with:** Human **Predicted to work with:** Mouse, Rat, Chicken, Xenopus laevis, Zebrafish
Immunogen	Synthetic peptide corresponding to Human MBD2 + MBD3 aa 200-300. Synthetic peptide: CKAFMVTDEDIRKQEE , corresponding to amino acids 215-230 of Human MBD3 Database link: **Q9UBB5** Run BLAST with Run BLAST with
Positive control	HeLa cells (nuclear fraction). IHC-P: Human placenta tissue Flow Cyt (Intra): HeLa cells.
General notes	The theoretical molecular weight of human MBD2 (411 amino acids) is 45 kD and human MBD3 (291 amino acids) is 33 kD. The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituent: PBS
Purity	Protein G purified

Primary antibody notes	The theoretical molecular weight of human MBD2 (411 amino acids) is 45 kD and human MBD3 (291 amino acids) is 33 kD.
Clonality	Monoclonal
Clone number	106B691
Isotype	IgG1
Light chain type	kappa

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab45027 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

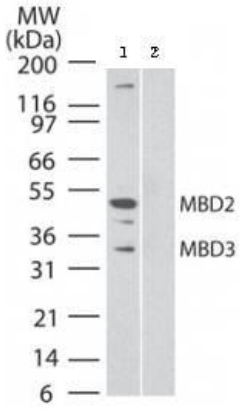
Application	Abreviews	Notes
IHC-P		1/300.
Flow Cyt (Intra)		Use 1µg for 10^6 cells. **ab170190** - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.
ICC/IF		Use at an assay dependent concentration.
WB	★★★★★ (1)	Use a concentration of 2 µg/ml. Predicted molecular weight: 33, 45 kDa.

Target

Relevance DNA methylation, or the addition of methyl groups to cytosine bases in the dinucleotide CpG, is imperative to proper development and regulates gene expression. The methylation pattern involves the enzymatic processes of methylation and demethylation. The demethylation enzyme was recently found to be a mammalian protein, which exhibits demethylase activity associated to a methyl-CpG-binding domain (MBD). The enzyme is able to revert methylated cytosine bases to cytosines within the particular dinucleotide sequence mdCpdG by catalyzing the cleaving of the methyl group as methanol. MeCP2 and MBD1 (PCM1) are first found to repress transcription by binding specifically to methylated DNA. MBD2 and MBD4 (also known as MED1) were later found to colocalize with foci of heavily methylated satellite DNA and believed to mediate the biological functions of the methylation signal. Surprisingly, MBD3 does not bind methylated DNA both in vivo and in vitro. MBD1, MBD2, MBD3, and MBD4 are found to be expressed in somatic tissues, but the expression of MBD1 and MBD2 is reduced or absent in embryonic stem cells, which are known to be deficient in MeCP1 activity. MBD4 have homology to bacterial base excision repair DNA N-glycosylases/lyases. In some microsatellite unstable tumors MBD4 is mutated at an exonic polynucleotide tract.

Cellular localization Nuclear

Images

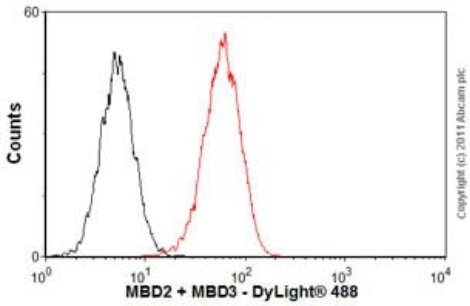


Western blot - Anti-MBD2 + MBD3 antibody [106B691] (ab45027)

All lanes : Anti-MBD2 + MBD3 antibody [106B691] (ab45027) at 2 µg/ml

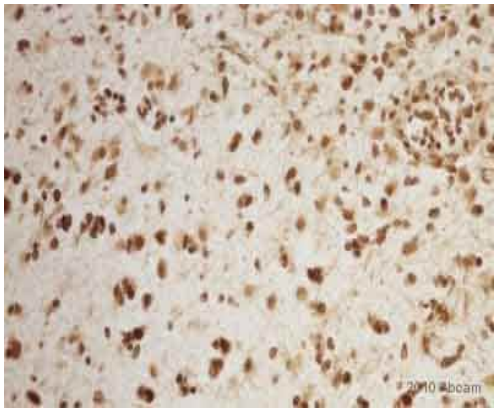
Lane 1 : HeLa cell lysate (nuclear fraction) without immunising peptide
Lane 2 : HeLa cell lysate (nuclear fraction) with immunising peptide

Predicted band size: 33, 45 kDa
Observed band size: 33,45 kDa
Additional bands at: 160 kDa, 40 kDa. We are unsure as to the identity of these extra bands.



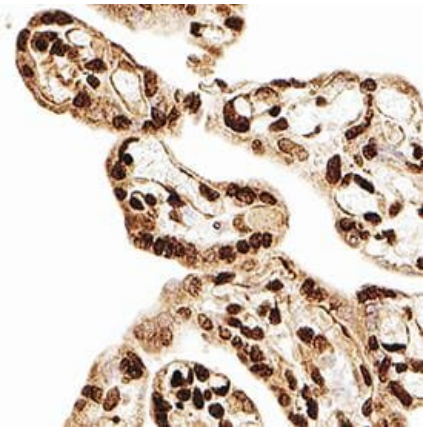
Flow Cytometry (Intracellular) - Anti-MBD2 + MBD3 antibody [106B691] (ab45027)

Overlay histogram showing HeLa cells stained with ab45027 (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 / 0.3M glycine to block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab45027, 1µg/1x10^6 cells) for 30 min at 22ºC. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (**ab96879**) at 1/500 dilution for 30 min at 22ºC. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (**ab91353**, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MBD2 + MBD3 antibody [106B691] (ab45027)
Image courtesy of an anonymous Abreview.

ab45027 at 2µg/ml staining MBD2 + MBD3 in human glioma tissue by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections).
Tissue was fixed in paraformaldehyde and a heat mediated antigen retrieval step was performed and samples were blocked using 10% BSA. The secondary used was an HRP conjugated anti rabbit/mouse mix.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MBD2 + MBD3 antibody [106B691] (ab45027)

Immunohistochemistry analysis of immersion fixed paraffin-embedded sections of human placenta labeling MBD2 + MBD3 with ab45027 at 1/300 for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody. Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue).

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