abcam

ab13537

Anti-Dnmt1 antibody [60B1220.1]

Anti-Dnmt1 antibody [60B1220.1] (ab13537) is a mouse monoclonal antibody detecting Dnmt1 in **Western Blot, Flow Cytometry, IHC-P**. Suitable for **Human, Mouse**.

- Over 210 publications
- Trusted since 2004

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine)
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human DNMT1 aa 600 to C-terminus. The exact immunogen used to generate this antibody is proprietary information. Database link P26358
Clone number	60B1220.1
Purification technique	Affinity purification Protein G
Specificity	This antibody detects a ~180 kDa protein, corresponding to the apparent molecular mass of Dnmt1 on SDS-PAGE immunoblots in samples of human and mouse origin. Immunogen itself has been shown to be toxic.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	This antibody is affinity purified.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1/100
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

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

Predicted

Species	Cow
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	Block in 1.5% BSA in 1x TBST. Other Band(s): Lower bands are DNMT1 degradation.

Expected

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

Predicted

Species	Cow
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Predicted

Species	Cow
Dilution info	-
Notes	-

Target data

See full target information DNMT1

Function

DNA methyltransferase that methylates CpG residues (PubMed:17200670, PubMed:18754681, PubMed:21745816, PubMed:26070743). Preferentially methylates hemimethylated DNA (PubMed:21745816, PubMed:26070743). Associates with DNA replication sites in S phase maintaining the methylation pattern in the newly synthesized strand, that is essential for epigenetic inheritance (PubMed:17200670, PubMed:21745816). Associates with chromatin during G2 and M phases to maintain DNA methylation independently of replication (PubMed:21745816). It is responsible for maintaining methylation patterns established in development (PubMed:21745816). DNA methylation is coordinated with methylation of histones (PubMed:16357870). Mediates transcriptional repression by direct binding to HDAC2 (PubMed:10888872). In association with DNMT3B and via the recruitment of CTCFL/BORIS, involved in activation of BAG1 gene expression by modulating dimethylation of promoter histone H3 at H3K4 and H3K9 (PubMed:18413740). Probably forms a corepressor complex required for activated KRAS-mediated promoter hypermethylation and transcriptional silencing of tumor suppressor genes (TSGs) or other tumor-related genes in colorectal cancer (CRC) cells (PubMed:24623306). Also required to maintain a transcriptionally repressive state of genes in undifferentiated embryonic stem cells (ESCs) (PubMed:24623306). Associates at promoter regions of tumor suppressor genes (TSGs) leading to their gene silencing (PubMed:24623306).

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	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-Dnmt1 antibody [60B1220.1] (ab13537) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunohistochemistry (IHC-P) in Human, Mouse samples.

What is the molecular weight of Dnmt1?
Anti-Dnmt1 [60B1220.1] (ab13537) specifically detects a band for Dnmt1 (UniProt: P26358) at a molecular weight of 180kDa.

Trusted by the scientific community
Anti-Dnmt1 [60B1220.1] (ab13537) was first used in a scientific publication in 2004 and has been cited over 210 times in peer-reviewed journals.

Reviewed by scientists
Anti-Dnmt1 [60B1220.1] (ab13537) has over 20 independent reviews from customers.

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.

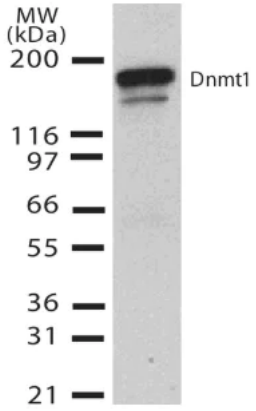
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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6 product images

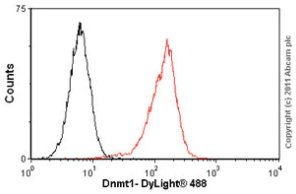


Western blot - Anti-Dnmt1 antibody [60B1220.1] (ab13537)

All lanes:
Western blot - Anti-Dnmt1 antibody [60B1220.1] (ab13537) at 1/1000 dilution

All lanes:
H1299 (Human non-small cell lung carcinoma cell line) lysate

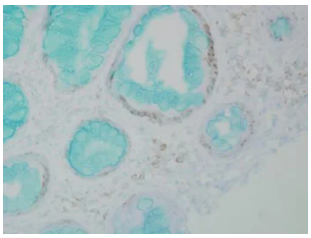
Predicted band size: 183 kDa



Flow Cytometry - Anti-Dnmt1 antibody [60B1220.1] (ab13537)

Dnmt1 Flow Cytometry staining using mouse Anti-Dnmt1 antibody

Overlay histogram showing HeLa cells stained with ab13537 (red line). The cells were fixed with 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 followed by the antibody (ab13537, 1/100 dilution) 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 IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a slightly decreased signal in HeLa cells fixed with 4% paraformaldehyde (10 min)/permeabilized in 0.1% PBS-Tween used under the same conditions.

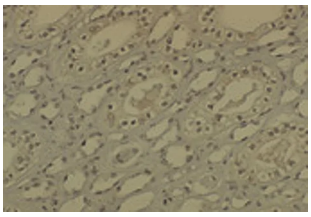


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Dnmt1 antibody [60B1220.1] (ab13537)

Dnmt1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Dnmt1 antibody

Immunohistochemistry analysis of formalin-fixed human colon carcinoma tissue labelling Dnmt1 with ab13537 at 1/10000 dilution (12 hours at 4°C), followed by biotin Goat Anti-Mouse antibody at

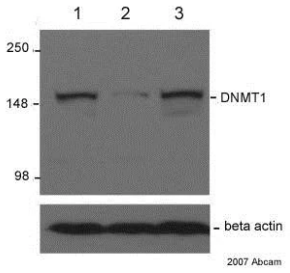
1/2000 for 1 hour at RT. Counterstain: Hematoxylin (purple/blue) nuclear stain at 200µl for 2 mins at RT.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Dnmt1 antibody [60B1220.1] (ab13537)

Dnmt1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Dnmt1 antibody

Immunohistochemistry analysis of mouse medullar kidney tissue labelling Dnmt1 with ab13537 at 1/10000 dilution, followed by biotin Goat Anti-Mouse antibody (brown). Counterstain: Hematoxylin (purple/blue) nuclear stain.



This image is courtesy of an anonymous customer review

Western blot - Anti-Dnmt1 antibody [60B1220.1] (ab13537)

All lanes:
Western blot - Anti-Dnmt1 antibody [60B1220.1] (ab13537) at 1 µg/mL

Lane 1:
HCT116 whole cell lysate

Lane 2:
HCT116 DNMT1 KO whole cell lysate

Lane 3:
HCT116 DNMT3b KO whole cell lysate

Secondary

All lanes:
HRP conjugated Sheep anti-mouse IgG

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 183 kDa

Exposure time: 1min

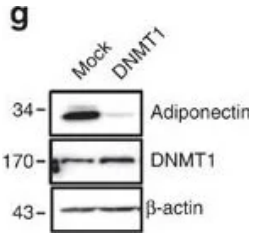


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Western blot - Anti-Dnmt1 antibody [60B1220.1] (ab13537)

Dnmt1 Western blot staining using mouse Anti-Dnmt1 antibody

Western Blotting using Anti-Dnmt1 antibody [60B1220.1], ab13537. Publication image from Park, Y. J. et al., 2015, Nat Commun, 26139044. Legend direct from paper.

DNMT1 regulates the DNA methylation of the adiponectin promoter R2.(a) Dnmt1 mRNA levels in adipocytes from NCD- (n=4) or HFD-fed (n=3) mice and in adipocytes from WT (n=4) or db/db mice (n=4). (b) Correlation between body mass index and DNMT1 mRNA levels in human adipocytes. mRNA levels were measured by qPCR. r2 and P values are indicated on the graph. (c–e) DNMT1 was suppressed by small interfering RNA in 3T3-L1 cells (n=3). (c) Dnmt1 and adiponectin mRNA levels. mRNA levels were measured by qPCR. (d) Adiponectin protein levels were determined by western blot analysis. (e) Bisulfite sequencing data at the R2. (f–h) DNMT1 overexpression in differentiated 3T3-L1 cells (n=3). (f,g) Dnmt1 and adiponectin mRNA and protein levels were measured by qPCR and western blot analysis. (h) Degree of R2 DNA methylation was examined by bisulfite

sequencing. (i) AluI restriction sites in R2. Red and grey arrows indicate the AluI restriction sites and CpG locations in the R2, respectively. Double headed arrow points to PCR amplified region. (j) Restriction enzyme accessibility assay in adipocytes from HFD-fed (n=5) or NCD-fed (n=5) mice. EcoRI and BamHI, which do not digest R2, were used as negative controls. Results are expressed as the mean±s.e.m. Similar results were obtained at least more than three independent experiments. *P<0.05; **P<0.01; ***P<0.001 in a two-tailed Student's t-test. siNC; negative control siRNA. See Supplementary Fig. 11 for full-length images of blots.

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