abcam

ab320817

Anti-Dnmt1 antibody [EPR28422-79]

Recombinant | RabMAb | Advanced Validation | 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	EPR28422-79
Purification technique	Affinity purification Protein A
Concentration	0.501 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/4000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ChIP-seq

Tested

Species	Human
Dilution info	8 µg for 10^7 Cells
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ChIC/CUT&RUN-seq

Not recommended

Species	Human, Mouse, Rat
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	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.

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

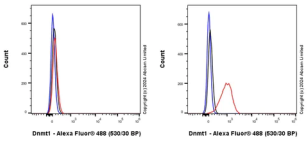
We do not recommend this combination. It is not covered by our product promise.

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

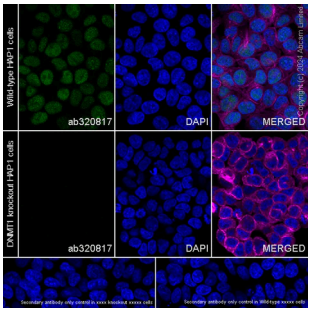


Flow Cytometry (Intracellular) - Anti-Dnmt1 antibody [EPR28422-79] (ab320817)

Dnmt1 Flow Cytometry (Intracellular) staining using rabbit Anti-Dnmt1 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized parental HAP1 (HOWT01) (human chronic myelogenous leukemia near-haploid cell, right) / DNMT1 KO HAP1(HO010163) (Left) cells labelling Dnmt1 with ab320817 at 1/50000 dilution (0.001ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody).

Goat anti-Mouse IgG (Alexa Fluor® 488, ab150113) at 1/5000 dilution was used as the secondary antibody.



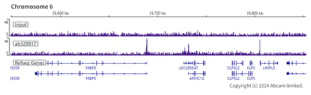
Immunocytochemistry/ Immunofluorescence - Anti-Dnmt1 antibody [EPR28422-79] (ab320817)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized DNMT1 KO HAP1 (DNMT1 knockout human chronic myelogenous leukemia near-haploid cell) cells labelling Dnmt1 with ab320817 at 1/4000 (0.125 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/ml dilution (Green).

Confocal image showing nuclear staining in HAP1 cell line (shown in green) and no staining in DNMT1 KO HAP1 cell line. The counterstain was observed in magenta. Nuclear DNA was labeled with DAPI (shown in blue). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

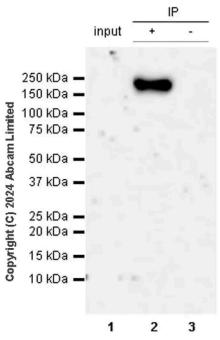
ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5 ug/ml dilution (Magenta). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/ml dilution.



ChIP-sequencing - Anti-Dnmt1 antibody [EPR28422-79] (ab320817)

Chromatin was prepared from HepG2 cells. Cells were fixed with 1% formaldehyde for 10 minutes. ChIP was performed with 10^7 cells and 8 µg of ab320817 [EPR28422-79]. ChIP DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 60 million reads. The Input control is also shown.



Immunoprecipitation - Anti-Dnmt1 antibody [EPR28422-79] (ab320817)

Dnmt1 was immunoprecipitated from 0.35 mg HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate with ab320817 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab320817 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate
Lane 2: ab320817 IP in HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab320817 in HepG2 whole cell lysate

Blocking and dilution buffer and concentration: 5% NFDM/TBST

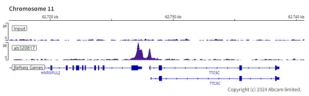
All lanes:
Immunoprecipitation - Anti-Dnmt1 antibody [EPR28422-79] (ab320817) at 1/30 dilution

All lanes:
HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate

Secondary

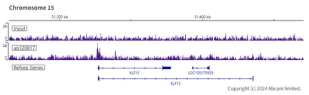
All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 180s



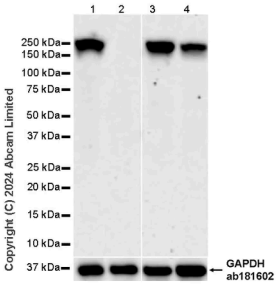
ChIP-sequencing - Anti-Dnmt1 antibody [EPR28422-79] (ab320817)

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ChIP-sequencing - Anti-Dnmt1 antibody [EPR28422-79] (ab320817)

Chromatin was prepared from HepG2 cells. Cells were fixed with 1% formaldehyde for 10 minutes. ChIP was performed with 10^7 cells and 8 µg of ab320817 [EPR28422-79]. ChIP DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 60 million reads. The Input control is also shown.



Western blot - Anti-Dnmt1 antibody [EPR28422-79] (ab320817)

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

In Western blot, ab320817 was shown to bind specifically to Dnmt1. Target of interest was observed at 183 kDa in wild-type HAP1 cell lysates (lane 1) with no signal observed at this size in Dnmt1 knockout cell line (lane 2).

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-Dnmt1 antibody [EPR28422-79] (ab320817) at 1/1000 dilution

Lane 1:
Wild-type HAP1 (human chronic myelogenous leukemia near-haploid cell) whole cell lysate at 20 µg

Lane 2:
Dnmt knockout HAP1 whole cell lysate at 20 µg

Lane 3:
K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate at 20 µg

Lane 4:
HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate at 20 µg

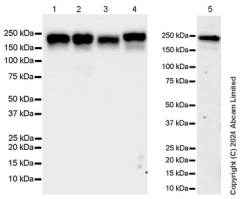
Secondary

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

Performed under reducing conditions.

Observed band size: 183 kDa, 36 kDa

Exposure time: 180s



Western blot - Anti-Dnmt1 antibody [EPR28422-79] (ab320817)

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

All lanes:
Western blot - Anti-Dnmt1 antibody [EPR28422-79] (ab320817) at 1/1000 dilution

Lane 1:
Jurkat (human T cell leukemia T lymphocyte from peripheral blood) whole cell lysate at 40 µg

Lane 2:
Raji (human Burkitts lymphoma B lymphocyte) whole cell lysate at 40 µg

Lane 3:
HEK-293 (human embryonic kidney epithelial cell) whole cell lysate at 40 µg

Lane 4:
Ramos (human Burkitts lymphoma B lymphocyte) whole cell lysate at 40 µg

Lane 5:
HepG2 (human hepatocellular carcinoma epithelial cell) 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: 183 kDa

Exposure time: 180s

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