

## Product datasheet

# Anti-Dnmt3b antibody - ChIP Grade ab2851

★★★★★ 5 Abreviews 49 References 6 Images

### Overview

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<b>Product name</b>	Anti-Dnmt3b antibody - ChIP Grade
<b>Description</b>	Rabbit polyclonal to Dnmt3b - ChIP Grade
<b>Host species</b>	Rabbit
<b>Specificity</b>	This antibody detects DNA methyltransferase 3b (Dnmt3b) from human and mouse tissues and cells as well as recombinant human Dnmt3b. This antibody detects, to a lesser extent, full-length human recombinant Dnmt3a.
<b>Tested applications</b>	<b>Suitable for:</b> ICC/IF, IP, IHC-P, WB, ChIP
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human
<b>Immunogen</b>	Synthetic peptide corresponding to Mouse Dnmt3b aa 1-14. Sequence: MKGDSRHLNEEEGA  (Peptide available as <a href="#">ab4922</a> )
	<a href="#">Run BLAST with</a> <a href="#">Run BLAST with</a>
<b>Positive control</b>	P19 nuclear extracts. ChIP: PMID: 16357870 (Vire E et al Nature 2006 439:871) has used U2OS cells and primers specific for the hsMYT1 promoter. The primers are described in PMID: 15231737 (Kirmizis A et al Genes and Dev 2004 18:1592).

### Properties

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<b>Form</b>	Liquid
<b>Storage instructions</b>	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.
<b>Storage buffer</b>	Preservative: 0.05% Sodium azide Constituents: 0.1% BSA, 99% PBS
<b>Purity</b>	Immunogen affinity purified
<b>Clonality</b>	Polyclonal
<b>Isotype</b>	IgG

### Applications

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Our [Abpromise guarantee](#) covers the use of **ab2851** in the following tested applications.

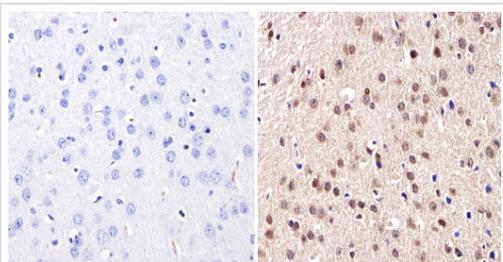
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
ICC/IF	★★★★☆	Use a concentration of 1 µg/ml.
IP		Use at an assay dependent concentration. PubMed: 16631596
IHC-P	★★★★☆	1/100 - 1/1000.
WB	★★★★☆	Use a concentration of 2 µg/ml. Detects a band of approximately 130 kDa (predicted molecular weight: 97.5 kDa). Can be blocked with <a href="#">Dnmt3b peptide (ab4922)</a> .
ChIP		Use at an assay dependent concentration. PubMed: 17972916

## Target

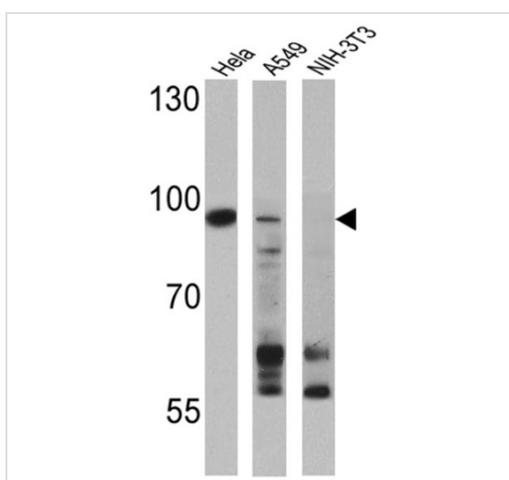
<b>Function</b>	Required for genome wide de novo methylation and is essential for the establishment of DNA methylation patterns during development. DNA methylation is coordinated with methylation of histones. May preferentially methylates nucleosomal DNA within the nucleosome core region. May function as transcriptional co-repressor by associating with CBX4 and independently of DNA methylation. Seems to be involved in gene silencing (By similarity). In association with DNMT1 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. Isoforms 4 and 5 are probably not functional due to the deletion of two conserved methyltransferase motifs.
<b>Tissue specificity</b>	Ubiquitous; highly expressed in fetal liver, heart, kidney, placenta, and at lower levels in spleen, colon, brain, liver, small intestine, lung, peripheral blood mononuclear cells, and skeletal muscle. Isoform 1 is expressed in all tissues except brain, skeletal muscle and PBMC, 3 is ubiquitous, 4 is expressed in all tissues except brain, skeletal muscle, lung and prostate and 5 is detectable only in testis and at very low level in brain and prostate.
<b>Involvement in disease</b>	Defects in DNMT3B are a cause of immunodeficiency-centromeric instability-facial anomalies syndrome (ICF) [MIM:242860]. ICF is a rare autosomal recessive disorder characterized by a variable immunodeficiency, mild facial anomalies, and centromeric heterochromatin instability involving chromosomes 1, 9, and 16. ICF is biochemically characterized by hypomethylation of CpG sites in some regions of heterochromatin.
<b>Sequence similarities</b>	Belongs to the C5-methyltransferase family. Contains 1 ADD domain. Contains 1 GATA-type zinc finger. Contains 1 PHD-type zinc finger. Contains 1 PWWP domain.
<b>Domain</b>	The PWWP domain is essential for targeting to pericentric heterochromatin.
<b>Post-translational modifications</b>	Sumoylated.
<b>Cellular localization</b>	Nucleus.

## Images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Dnmt3b antibody - ChIP Grade (ab2851)

ab2851 labelling Dnmt3b in the nucleus of Mouse brain tissue (right) compared with a negative control (left) by Immunohistochemistry (formalin/PFA-fixed paraffin-embedded sections). To expose target proteins, antigen retrieval method was performed using 10mM sodium citrate (pH 6.0) microwaved for 8-15 min. Tissues were blocked in 3% H<sub>2</sub>O<sub>2</sub>-methanol for 15 min at room temperature, washed with ddH<sub>2</sub>O and PBS. Tissue sections were incubated with primary antibody (1:200 in 3% BSA-PBS) overnight at 4°C. A HRP-conjugated anti-rabbit was used as the secondary antibody, followed by colorimetric detection using a DAB kit. Tissues were counterstained with hematoxylin and dehydrated with ethanol and xylene to prep for mounting.



Western blot - Anti-Dnmt3b antibody - ChIP Grade (ab2851)

**All lanes** : Anti-Dnmt3b antibody - ChIP Grade (ab2851) at 1/1000 dilution

**Lane 1** : HeLa cell lysate

**Lane 2** : A549 cell lysate

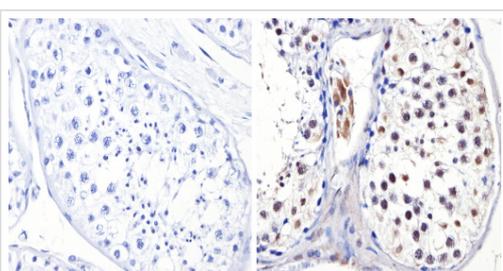
**Lane 3** : NIH-3T3 cell lysate

Lysates/proteins at 25 µg per lane.

**Predicted band size:** 97.5 kDa

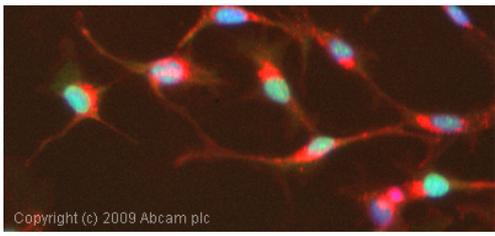
**Observed band size:** 97 kDa

[why is the actual band size different from the predicted?](#)



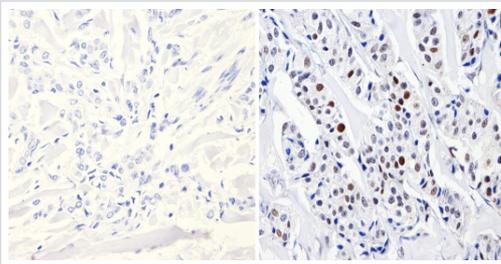
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Dnmt3b antibody - ChIP Grade (ab2851)

ab2851 labelling Dnmt3b in the nucleus of Human testis tissue (right) compared with a negative control (left) by Immunohistochemistry (formalin/PFA-fixed paraffin-embedded sections). To expose target proteins, antigen retrieval method was performed using 10mM sodium citrate (pH 6.0) microwaved for 8-15 min. Tissues were blocked in 3% H<sub>2</sub>O<sub>2</sub>-methanol for 15 min at room temperature, washed with ddH<sub>2</sub>O and PBS. Tissue sections were incubated with primary antibody (1:500 in 3% BSA-PBS) overnight at 4°C. A HRP-conjugated anti-rabbit was used as the secondary antibody, followed by colorimetric detection using a DAB kit. Tissues were counterstained with hematoxylin and dehydrated with ethanol and xylene to prep for mounting.



Immunocytochemistry/ Immunofluorescence - Anti-Dnmt3b antibody - ChIP Grade (ab2851)

ICC/IF image of ab2851 stained HepG2 cells. The cells were 100% methanol fixed (5 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab2851, 1µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-rabbit IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Dnmt3b antibody - ChIP Grade (ab2851)

ab2851 labelling Dnmt3b in the nucleus and cytoplasm of Human breast carcinoma (right) compared with a negative control (left) by Immunohistochemistry (formalin/PFA-fixed paraffin-embedded sections). To expose target proteins, antigen retrieval method was performed using 10mM sodium citrate (pH 6.0) microwaved for 8-15 min. Tissues were blocked in 3% H<sub>2</sub>O<sub>2</sub>-methanol for 15 min at room temperature, washed with ddH<sub>2</sub>O and PBS. Tissue sections were incubated with primary antibody (1:500 in 3% BSA-PBS) overnight at 4°C. A HRP-conjugated anti-rabbit was used as the secondary antibody, followed by colorimetric detection using a DAB kit. Tissues were counterstained with hematoxylin and dehydrated with ethanol and xylene to prep for mounting.



Western blot - Anti-Dnmt3b antibody - ChIP Grade (ab2851)

**All lanes :** Anti-Dnmt3b antibody - ChIP Grade (ab2851) at 1 µg/ml

**Lane 1 :** A498 (Human Kidney Carcinoma) Whole Cell Lysate

**Lane 2 :** JEG-3 (Human placental choriocarcinoma cell line) Whole Cell Lysate

Lysates/proteins at 10 µg per lane.

### Secondary

**All lanes :** Goat Anti-Rabbit IgG H&L (HRP) preadsorbed (ab97080) at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

**Predicted band size:** 97.5 kDa

**Observed band size:** 97.5 kDa

**Additional bands at:** 32 kDa, 46 kDa. We are unsure as to the identity of these extra bands.

**Exposure time:** 2 minutes

**Please note:** All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE"

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