

## Product datasheet

# Anti-Dnmt3b antibody [52A1018] - ChIP Grade ab13604

★★★★★ 9 Abreviews 51 References 4 Images

### Overview

<b>Product name</b>	Anti-Dnmt3b antibody [52A1018] - ChIP Grade
<b>Description</b>	Mouse monoclonal [52A1018] to Dnmt3b - ChIP Grade
<b>Host species</b>	Mouse
<b>Tested applications</b>	<b>Suitable for:</b> ChIP, IHC-P, WB, IP, ICC/IF, Flow Cyt
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human
<b>Immunogen</b>	His-tagged recombinant protein (Mouse).
<b>Positive control</b>	P19 nuclear extract

### Properties

<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: 0.02% Sodium azide Constituents: PBS, 0.05% BSA
<b>Purity</b>	Protein G purified
<b>Clonality</b>	Monoclonal
<b>Clone number</b>	52A1018
<b>Isotype</b>	IgG1

### Applications

Our [Abpromise guarantee](#) covers the use of **ab13604** 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
ChIP	★★★★★	Use at an assay dependent concentration. PubMed: 15548683
IHC-P	★★★★☆	Use at an assay dependent concentration.

Application	Abreviews	Notes
WB	★★★★☆	Use a concentration of 2 - 4 µg/ml. Detects a band of approximately 110 kDa.
IP		Use a concentration of 1 - 2 µg/ml.
ICC/IF		Use a concentration of 1 - 2 µg/ml.
Flow Cyt		Use 1µg for 10 <sup>6</sup> cells. <a href="#">ab170190</a> - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

## Target

### Function

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.

### Tissue specificity

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.

### Involvement in disease

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.

### Sequence similarities

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.

### Domain

The PWWP domain is essential for targeting to pericentric heterochromatin.

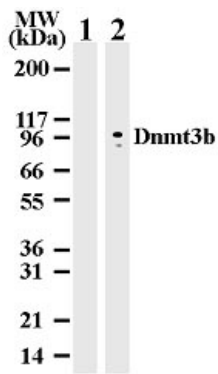
### Post-translational modifications

Sumoylated.

### Cellular localization

Nucleus.

## Images



Western blot - Anti-Dnmt3b antibody [52A1018] -  
ChIP Grade (ab13604)

**All lanes :** Anti-Dnmt3b antibody [52A1018] -  
ChIP Grade (ab13604) at 2 µg/ml

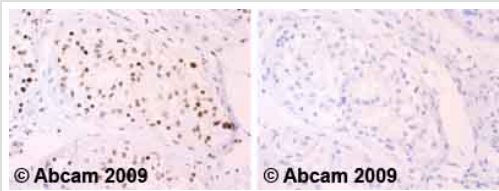
**Lane 1 :** Cell lysates prepared from mouse  
Dnmt3a transfected 293 cells.

**Lane 2 :** Cell lysates prepared from mouse  
Dnmt3b transfected 293 cells

Lysates/proteins at 10 µg per lane.

**Observed band size:** 110 kDa

Western blot analysis for Dnmt3b using  
ab13604 at 2 µg/ml against 10 µg of 293 cell  
lysates transfected with mouse Dnmt3a (lane  
1) and Dnmt3b (lane 2). A protein band of  
approximately 110 kDa is only detected in 293  
cells transfected with mouse Dnmt3b cDNA.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Dnmt3b antibody [52A1018] - ChIP Grade (ab13604)

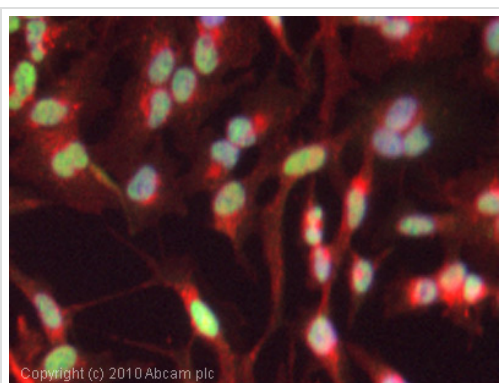
Ab13604 staining Human normal testis.

Staining is localised to the nucleus.

Left panel: with primary antibody at 4 ug/ml.

Right panel: isotype control.

Sections were stained using an automated system DAKO Autostainer Plus , at room temperature. Sections were rehydrated and antigen retrieved with the DAKO 3-in-1 antigen retrieval buffer EDTA pH 9.0 in a DAKO PT Link. Slides were peroxidase blocked in 3% H<sub>2</sub>O<sub>2</sub> in methanol for 10 minutes. They were then blocked with Dako Protein block for 10 minutes (containing casein 0.25% in PBS) then incubated with primary antibody for 20 minutes and detected with Dako Envision Flex amplification kit for 30 minutes. Colorimetric detection was completed with diaminobenzidine for 5 minutes. Slides were counterstained with Haematoxylin and coverslipped under DePeX. Please note that for manual staining we recommend to optimize the primary antibody concentration and incubation time (overnight incubation), and amplification may be required.



Immunocytochemistry/ Immunofluorescence - Anti-Dnmt3b antibody [52A1018] - ChIP Grade (ab13604)

ICC/IF image of ab13604 stained HepG2

cells. The cells were 4% formaldehyde fixed

(10 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 (ab13604, 1 µg/ml) overnight

at +4°C. The secondary antibody (green) was

Alexa Fluor® 488 goat anti-mouse IgG (H+L)

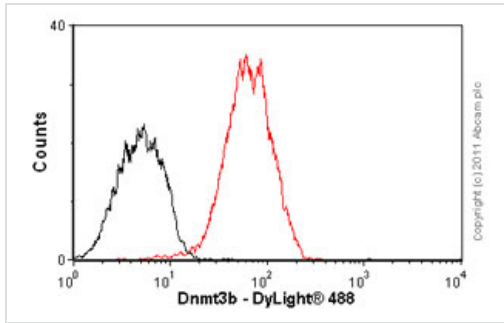
used at a 1/1000 dilution for 1h. Alexa Fluor®

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.



Flow Cytometry - Anti-Dnmt3b antibody [52A1018] - ChIP Grade (ab13604)

Overlay histogram showing HepG2 cells stained with ab13604 (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 (ab13604, 1µg/1x10<sup>6</sup> cells) 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<sup>6</sup> cells) used under the same conditions. Acquisition of >5,000 events was performed.

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