

**Dnmt3a Antibody**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP1034a****Specification**

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**Dnmt3a Antibody - Product Information**

Application	<b>WB, IHC-P,E</b>
Primary Accession	<a href="#">O9Y6K1</a>
Other Accession	<a href="#">O1LZ53</a> , <a href="#">O88508</a> , <a href="#">Q4W5Z4</a>
Reactivity	<b>Human, Mouse, Rat</b>
Predicted	<b>Chicken</b>
Host	<b>Rabbit</b>
Clonality	<b>Polyclonal</b>
Isotype	<b>Rabbit IgG</b>
Antigen Region	<b>457-486</b>

**Dnmt3a Antibody - Additional Information****Gene ID** 1788**Other Names**

DNA (cytosine-5)-methyltransferase 3A, Dnmt3a, DNA methyltransferase HsaIIIA, DNA MTase HsaIIIA, MhsaIIIA, DNMT3A

**Target/Specificity**

This Dnmt3a antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 457-486 amino acids from human Dnmt3a.

**Dilution**WB~~1:1000  
IHC-P~~1:50~100**Format**

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

**Storage**

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

Dnmt3a Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**Dnmt3a Antibody - Protein Information****Name** DNMT3A**Function** Required for genome-wide de novo methylation and is essential for the establishment of

DNA methylation patterns during development (PubMed:[12138111](#), PubMed:[16357870](#), PubMed:[30478443](#)). DNA methylation is coordinated with methylation of histones (PubMed:[12138111](#), PubMed:[16357870](#), PubMed:[30478443](#)). It modifies DNA in a non-processive manner and also methylates non-CpG sites (PubMed:[12138111](#), PubMed:[16357870](#), PubMed:[30478443](#)). May preferentially methylate DNA linker between 2 nucleosomal cores and is inhibited by histone H1 (By similarity). Plays a role in paternal and maternal imprinting (By similarity). Required for methylation of most imprinted loci in germ cells (By similarity). Acts as a transcriptional corepressor for ZBTB18 (By similarity). Recruited to trimethylated 'Lys-36' of histone H3 (H3K36me3) sites (By similarity). Can actively repress transcription through the recruitment of HDAC activity (By similarity). Also has weak auto-methylation activity on Cys-710 in absence of DNA (By similarity).

#### Cellular Location

Nucleus. Chromosome Cytoplasm. Note=Accumulates in the major satellite repeats at pericentric heterochromatin {ECO:0000250|UniProtKB:O88508}

#### Tissue Location

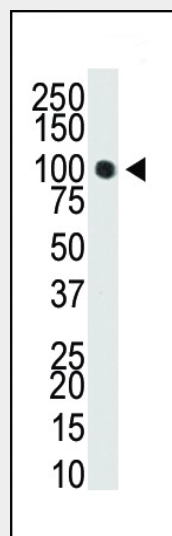
Highly expressed in fetal tissues, skeletal muscle, heart, peripheral blood mononuclear cells, kidney, and at lower levels in placenta, brain, liver, colon, spleen, small intestine and lung

### Dnmt3a Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

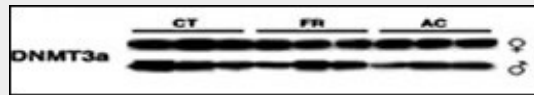
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### Dnmt3a Antibody - Images

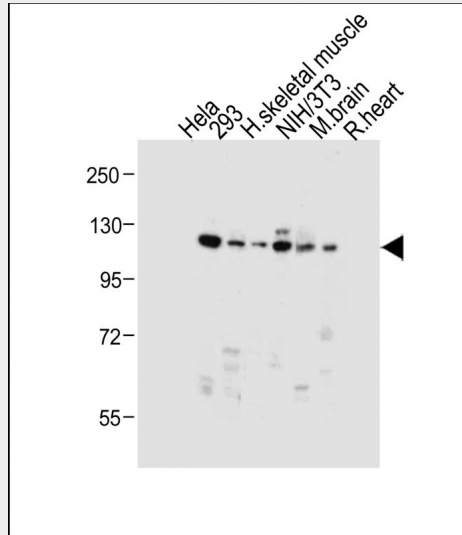


Western blot analysis of anti-Dnmt3a Pab (Cat. #AP1034a) in T47-D cell lysate. Dnmt3a (Arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with

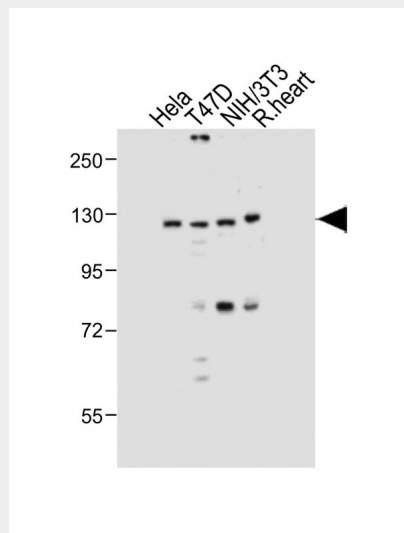
chemiluminescence.



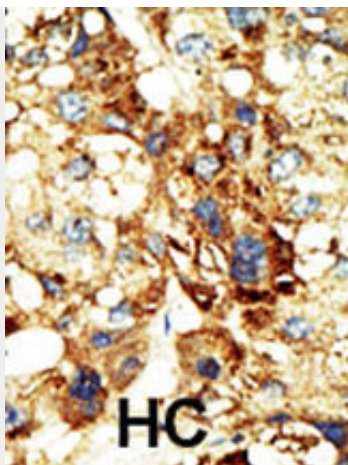
Lysates from mice thymus tissue after radiation were subjected to WB using antibody against DNMT3a. CT, control animals; FR, animals subjected to fractionated exposure; AC, acutely exposed animals. All sample loading was normalized to protein content. Representative Western blots from three independent experiments are shown; each lane represents a protein extract of a thymus of one animal. (Mol. Cancer Res. 2005 Oct 01;3(10):553-561)



All lanes : Anti-Dnmt3a Antibody at 1:1000 dilution Lane 1: HeLa whole cell lysate Lane 2: 293 whole cell lysate Lane 3: Human skeletal muscle tissue lysate Lane 4: NIH/3T3 whole cell lysate Lane 5: Mouse brain tissue lysate Lane 6: Rat heart tissue lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 102 kDa Blocking/Dilution buffer: 5% NFDm/TBST.



All lanes : Anti-Dnmt3a Antibody at 1:1000 dilution Lane 1: HeLa whole cell lysate Lane 2: T47D whole cell lysate Lane 3: NIH/3T3 whole cell lysate Lane 4: Rat heart tissue lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 102 kDa Blocking/Dilution buffer: 5% NFDm/TBST.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

### **Dnmt3a Antibody - Background**

CpG methylation is an epigenetic modification that is important for embryonic development, imprinting, and X-chromosome inactivation. Studies in mice have demonstrated that DNA methylation is required for mammalian development. Dnmt3a is a DNA methyltransferase that is thought to function in de novo methylation, rather than maintenance methylation. The protein localizes to the cytoplasm and nucleus and its expression is developmentally regulated.

### **Dnmt3a Antibody - References**

Xie, S., et al., *Gene* 236(1):87-95 (1999). Robertson, K.D., et al., *Nucleic Acids Res.* 27(11):2291-2298 (1999).

### **Dnmt3a Antibody - Citations**

- [DNA methylation and regulation of DNA methyltransferases in a freeze tolerant vertebrate.](#)
- [Variants of cause transcript-specific DNA methylation patterns and affect hematopoiesis](#)
- [Glucocorticoid-induced S-adenosylmethionine enhances the interferon signaling pathway by restoring STAT1 protein methylation in hepatitis B virus-infected cells.](#)
- [Hiwi mediated tumorigenesis is associated with DNA hypermethylation.](#)
- [Sex-specific radiation-induced microRNAome responses in the hippocampus, cerebellum and frontal cortex in a mouse model.](#)
- [OxLDL up-regulates microRNA-29b, leading to epigenetic modifications of MMP-2/MMP-9 genes: a novel mechanism for cardiovascular diseases.](#)
- [DNA methyltransferase expression in the human endometrium: down-regulation by progesterone and estrogen.](#)
- [Role of epigenetic effectors in maintenance of the long-term persistent bystander effect in spleen in vivo.](#)
- [Up-regulation of DNA-methyltransferase 3A expression is associated with hypomethylation of intron 25 in human testicular germ cell tumors.](#)
- [Effect of long-term tamoxifen exposure on genotoxic and epigenetic changes in rat liver: implications for tamoxifen-induced hepatocarcinogenesis.](#)
- [Irradiation induces DNA damage and modulates epigenetic effectors in distant bystander tissue in vivo.](#)
- [Age-related changes in Usp9x protein expression and DNA methylation in mouse brain.](#)
- [Fractionated low-dose radiation exposure leads to accumulation of DNA damage and profound alterations in DNA and histone methylation in the murine thymus.](#)
- [Sex- and tissue-specific expression of maintenance and de novo DNA methyltransferases](#)

[upon low dose X-irradiation in mice.](#)