



## Dnmt2 (102B1259.2): sc-52920

### BACKGROUND

Methylation at the 5'-position of cytosine is the only known naturally occurring covalent modification of the mammalian genome. DNA methylation requires the enzymatic activity of DNA 5-cytosine methyltransferase (Dnmt) proteins, which catalyze the transfer of a methyl group from S-adenosyl methionine to the 5'-position of cytosines residing in the dinucleotide CpG motif and this methylation results in transcriptional repression of the target gene. The Dnmt enzymes are encoded by independent genes. Dnmt1 is the most abundant and it preferentially methylates hemimethylated DNA and coordinates gene expression during development. Additional mammalian Dnmt proteins include Dnmt2 and Dnmt3. Dnmt2 lacks the large N-terminal regulator domain of Dnmt1, is expressed at substantially lower levels in adult tissues and is likely involved in methylating newly integrated retroviral DNA. Dnmt3a and Dnmt3b are encoded by two distinct genes, but both are abundantly expressed in embryonic stem cells, where they also methylate CpG motifs on DNA.

### REFERENCES

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2. Okano, M., Xie, S. and Li, E. 1998. Dnmt2 is not required for *de novo* and maintenance methylation of viral DNA in embryonic stem cells. *Nucleic Acids Res.* 26: 2536-2540.
3. Hsieh, C.L. 1999. *In vivo* activity of murine *de novo* methyltransferases, Dnmt3a and Dnmt3b. *Mol. Cell. Biol.* 19: 8211-8218.
4. Walsh, C.P. and Bestor, T.H. 1999. Cytosine methylation and mammalian development. *Genes Dev.* 13: 26-34.
5. Cardoso, M.C. and Leonhardt, H. 1999. DNA methyltransferase is actively retained in the cytoplasm during early development. *J. Cell Biol.* 147: 25-32.
6. Bigey, P., Ramchandani, S., Theberge, J., Araujo, F.D. and Szyf, M. 2000. Transcriptional regulation of the human DNA methyl-transferase (Dnmt1) gene. *Gene* 242: 407-418.
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### CHROMOSOMAL LOCATION

Genetic locus: DNMT2 (human) mapping to 10p15.1; Dnmt2 (mouse) mapping to 2 A1.

### SOURCE

Dnmt2 (102B1259.2) is a mouse monoclonal antibody raised against a synthetic peptide of Dnmt2 of mouse origin.

### PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

### APPLICATIONS

Dnmt2 (102B1259.2) is recommended for detection of Dnmt2 of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Suitable for use as control antibody for Dnmt2 siRNA (m): sc-35206.

Molecular Weight of Dnmt2: 45 kDa.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048.

### STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

### RESEARCH USE

For research use only, not for use in diagnostic procedures.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.