

Monoclonal Antibody to 5-Methyl Cytosine / 5-MeC - Purified

Alternate names:	5-MeCyd, 5-Methyl Cytidine, 5-Methylcytidine, 5MeC
Catalog No.:	SM1872PT
Quantity:	20 µg
Concentration:	1.0 mg/ml (at O.D. 280nm)
Background:	Cytosine is a nucleobase whilst cytidine is a molecule (known as a nucleoside) that is formed when Cytosine is attached to a Ribose ring (also known as a Ribofuranose) via a beta-N1-glycosidic bond.
Host / Isotype:	Mouse / IgG1
Recommended Isotype Controls:	SM10P (for use in human samples), SM20P (for use in rat samples), AM03095PU-N
Clone:	33D3
Immunogen:	Spleen cells from immunised Balb/c mice were fused with cells of the Sp2/0Ag 14 myeloma cell line
Format:	State: Liquid purified IgG fraction (<98% Gel electrophoresis SDS PAGE) Purification: Affinity Chromatography on Protein A Buffer System: 10 mM PBS, pH 7.4 Preservatives: 0.01% Thimerosal
Applications:	Flow Cytometry: Use at an assay dependent dilution. (Use 10 µl of working dilution to label 1,000,000 cells in 100 µl. (See Habib, M. et al. 1999) Membrane permeabilisation may be required for this application. Cell pretreatment before staining is described in Ref.4 (Giraldo, A. M. et al.) Western blot/Immunoblotting: 1/250 (Southern blot 1/200). Immunofluorescence: 1/500. Immunohistochemistry on Frozen and Paraffin Embedded Sections: This product requires antigen retrieval using heat treatment prior to staining of paraffin sections. Sodium citrate buffer pH 6.0 is recommended for this purpose. Methylated DNA Immunoprecipitation (MeDIP): Use at an assay dependent concentration, 1-2 µg per IP. Immunocytochemistry: 0.5-5 µg/ml. ELISA: 1/10000 OR use at an assay dependent concentration. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.
Specificity:	This antibody recognizes the modified base 5-Methylcytidine (5-MeCyd) found in DNA of plants and vertebrates. DNAmethylation is a DNA modification process, which is involved in the control of gene expression.

For research and in vitro use only. Not for diagnostic or therapeutic work.

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Clone 33D3 has been developed to discriminate between the modified base 5-MeCyd and the normal counterpart Cytosine.

Reports suggest that in tumours, DNA is frequently globally hypomethylated compared to the DNA from normal tissue.

Species Reactivity: **Tested:** Human, Rat and Mouse.

Storage: Store undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

Product Citations: **Originator or purchased from resellers:**

1. Reynaud C, Bruno C, Boullanger P, Grange J, Barbesti S, Niveleau A. Monitoring of urinary excretion of modified nucleosides in cancer patients using a set of six monoclonal antibodies. *Cancer Lett.* 1992 Jan 31;61(3):255-62. PubMed PMID: 1739950.
2. Habib M, Fares F, Bourgeois CA, Bella C, Bernardino J, Hernandez-Blazquez F, et al. DNA global hypomethylation in EBV-transformed interphase nuclei. *Exp Cell Res.* 1999 May 25;249(1):46-53. PubMed PMID: 10328952.
3. Hernandez-Blazquez FJ, Habib M, Dumollard JM, Barthelemy C, Benchaib M, de Capoa A, et al. Evaluation of global DNA hypomethylation in human colon cancer tissues by immunohistochemistry and image analysis. *Gut.* 2000 Nov;47(5):689-93. PubMed PMID: 11034586.
4. Giraldo AM, Lynn JW, Purpera MN, Godke RA, Bondioli KR. DNA methylation and histone acetylation patterns in cultured bovine fibroblasts for nuclear transfer. *Mol Reprod Dev.* 2007 Dec;74(12):1514-24. PubMed PMID: 17440941.
5. Shen R, Tao L, Xu Y, Chang S, Van Brocklyn J, Gao JX. Reversibility of aberrant global DNA and estrogen receptor-alpha gene methylation distinguishes colorectal precancer from cancer. *Int J Clin Exp Pathol.* 2009;2(1):21-33. Epub 2008 Apr 20. PubMed PMID: 18830381.
6. Pontes O, Lawrence RJ, Silva M, Preuss S, Costa-Nunes P, Earley K, et al. Postembryonic establishment of megabase-scale gene silencing in nucleolar dominance. *PLoS One.* 2007 Nov 7;2(11):e1157. PubMed PMID: 17987131.
7. Yang F, Zhang L, Li J, Huang J, Wen R, Ma L, et al. Trichostatin A and 5-azacytidine both cause an increase in global histone H4 acetylation and a decrease in global DNA and H3K9 methylation during mitosis in maize. *BMC Plant Biol.* 2010 Aug 18;10:178. doi: 10.1186/1471-2229-10-178. PubMed PMID: 20718950.
8. Suter JD, Howard DJ, Shi H, Caldwell CW, Fan X. Label-free DNA methylation analysis using opto-fluidic ring resonators. *Biosens Bioelectron.* 2010 Nov 15;26(3):1016-20. doi: 10.1016/j.bios.2010.08.050. Epub 2010 Aug 20. PubMed PMID: 20846848.

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