

## SM1872PS

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

<b>Alternate names:</b>	5-MeCyd, 5-Methyl Cytidine, 5-Methylcytidine, 5MeC
<b>Quantity:</b>	50 µg
<b>Concentration:</b>	1.0 mg/ml
<b>Background:</b>	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.
<b>Host / Isotype:</b>	Mouse / IgG1
<b>Recommended Isotype Controls:</b>	SM10P (for use in human samples), SM20P (for use in rat samples), AM03095PU-N
<b>Clone:</b>	33D3
<b>Immunogen:</b>	Spleen cells from immunised Balb/c mice were fused with cells of the Sp2/OAg 14 myeloma cell line
<b>Format:</b>	<b>State:</b> Liquid purified IgG fraction <b>Purification:</b> Affinity Chromatography on Protein A <b>Buffer System:</b> 10 mM PBS, pH 7.4 <b>Preservatives:</b> 0.01% Thimerosal
<b>Applications:</b>	<b>Flow Cytometry:</b> Membrane permeabilisation may be required for this application. Cell pretreatment before staining is described in Ref.4 (Giraldo, A. M. et al.) <b>Immunoblotting.</b> <b>Immunofluorescence.</b> <b>Immunohistochemistry on Frozen and Paraffin Embedded Sections:</b> 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. This antibody has been reported for use in <b>Methylated DNA Immunoprecipitation (MeDIP)</b> . Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.
<b>Specificity:</b>	This antibody recognises the modified base 5-Methylcytidine (5-MeCyd) found in DNA of plants and vertebrates. DNA methylation is a DNA modification process, which is involved in the control of gene expression. 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.
<b>Species Reactivity:</b>	<b>Tested:</b> Human, Rat and Mouse.
<b>Storage:</b>	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.

### General Readings:

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. et al. (1999) DNA Global Hypomethylation in EBV - Transformed Interphase Nuclei. *Exp. Cell. Res.* 249: 46-53.
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.