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5-Methylcytosine (5-mC) Monoclonal Antibody [33D3]

(Catalog # A-1014)

Background
5-methylcytosine (5-mC) is formed when DNA methyltransferase (DNMT) catalyzes the addition of a methyl group onto the 5-carbon of the cytosine ring, an epigenetic process known as **DNA methylation**. 5-mC is considered the "fifth" DNA base and this 5-methylcytosine mouse monoclonal antibody is ideal for discriminating between the unmodified cytosine base (C) and the methylated cytosine base (5-mC) for DNA methylation studies. DNA methylation, the major epigenetic modification of eukaryotic genomes, plays an essential role in mammalian development. DNA methylation of promoter regions leads to inactivation of gene function. Also, DNA methylation status varies according to tissue type, and region-specific DNA hypermethylation and global DNA hypomethylation have been demonstrated to play an important role in tumorigenesis.

Description
Mouse monoclonal antibody to 5-methylcytosine (5-mC), clone 33D3, MeDIP/ChIP-grade, used in DNA methylation studies.

Concentration
1 mg/ml

Purification
Protein A

Immunogen
Ovalbumin-conjugated 5-methylcytosine (5-mC)

Isotype
IgG1

Specificity
Modified base 5-methylcytosine (5-mC), a broad range of species.

Formulation
Purified IgG in 10 mM phosphate buffer, 150 mM NaCl, pH 7.4.

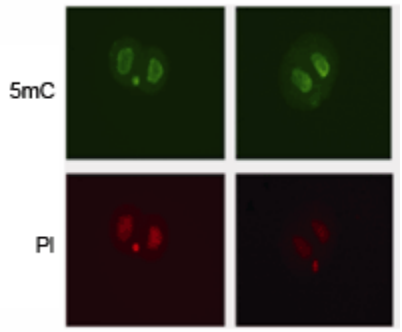
Storage
4°C, stable for 6 months from the date of shipment. For long-term storage, aliquot and store at -20°C. Avoid repeated freezing and thawing. Multiple freeze/thaw cycles may result in decreased performance.

Handling Recommendations
For maximum recovery of the products, centrifuge the vial prior to opening the cap.

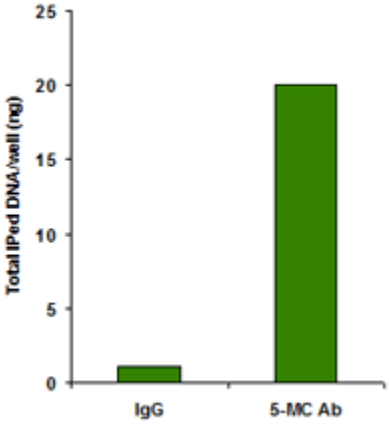
Alternative Names
5-methylcytidine, anti-5-methylcytidine, anti-5-methylcytosine, anti-5mC, anti-5-mC, anti-5meC, anti-5-meC, 5mC, 5meC, 5-meC, 5'-methyl-2'-deoxycytidine, 5MedCyd

Application & Suggested Dilutions*
Dot Blot: 1:1000-1:2000; Immunohistochemistry: 1:100-1:500; Immunofluorescence: 1:100-1:500; ELISA: 1:1000-1:2000; MeDIP: 0.5-1 µg/reaction

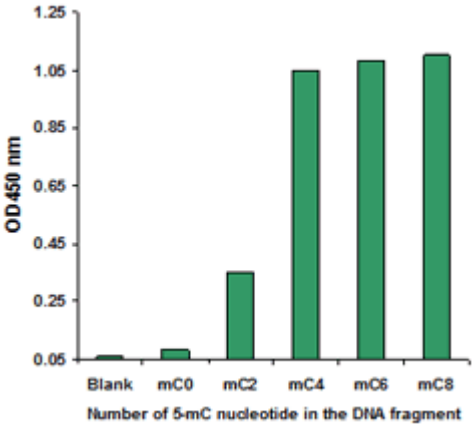
**The end user is responsible for determining optimal working dilutions.*



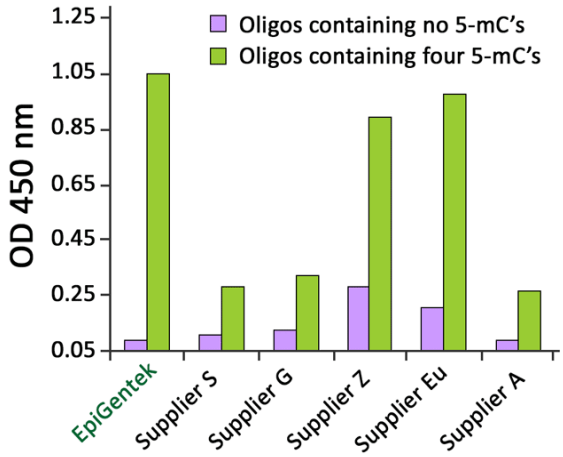
Immunofluorescence staining with 5-methylcytosine antibody (anti-5mc) clone 33D3.



Methylated DNA successfully captured by 5-methylcytosine antibody (anti-5mc) clone 33D3 during MeDIP.



Synthesized oligos containing different numbers of 5-methylcytosines were captured with the Clone 33D3 anti-5-methylcytosine antibody (Cat No. A-1014) and then colorimetrically detected. The results show that the oligos containing as few as two 5-mCs can still be captured and oligos with four or more 5-mCs can be fully captured by the antibody.



Synthesized oligos containing different numbers of 5-methylcytosines were captured with anti-5-methylcytosine antibodies from various companies and then colorimetrically detected for comparison. Results show Epigentek's 5-mC antibody has the highest sensitivity and specificity in capturing methylated DNA fragments.