COSMO BIO CO., LTD.
Inspiration for Life Science

MONOCLONAL ANTIBODY

For research use only. Not for clinical diagnosis.

Catalog No. BAM-51-001-EX

Anti- 5-Methylcytosine, ascite fluid (clone 5MC-CD)

BACKGROUND

DNA methylation is a type of chemical modification of DNA that can be inherited and subsequently removed without changing the original DNA sequence. Therefore it is a part of the epigenetic code and is the most well-characterized epigenetic mechanism. DNA methylation results in addition of a methyl group to DNA . for example, to the number 5 carbon of the cytosine pyrimidine ring .which involves reduction in gene expression. In adult somatic tissues, DNA methylation typically occurs in a CpG dinucleotide context; non-CpG methylation is prevalent in embryonic stem cells. In plants, cytosines are methylated both symmetrically (CpG or CpNpG) and asymmetrically (CpNpNp), where N can be any nucleotide except guanine.

Product type	Primary antibodies
Host	Mouse
Source	Ascites
Form	Liquid
	Mouse ascite fluid added with 0.05 % sodium azide
Volume	100 μl
Concentration	
Specificity	
Antigen	5-Methylcytosine conjugated to bovine serum albumin (Ref 3)
Clone	5MC-CD
Isotype	IgM

Application notes

IC, IB

Recommended use

Recommended dilutions

Immunocytochemistry: ~200 fold dilution (Figure below and Ref.1 & 2)

Immuno-blotting detection of DNA with5-methylocytosine on nitrocellulose: ~3,000 fold dilution (Ref. 3 & 4)

Optimal dilutions/concentrations should be determined by the end user.

Staining Pattern

Cross reactivity

DNA with 5-Methylcytosine

Storage

4°C (long period, -80°C)

References

(This product has been used in references 1-3 (& many more publications)

Sharif J *et al* “The SRA protein Np95 mediates epigenetic inheritance by recruiting Dmnt1 to methylated DNA” *Nature* **450**: 908-912 (2007) PMID: 17994007

Nishiyama R *et al* “A chloroplast-resident DNA methyltransferase is responsible for hypermethylation of chloroplast genes in Chlamydomonas maternal gametes” *Proc Natl Acad Sci USA* **99**: 5925-5930 (2002) PMID: 11983892

1) Sano H *et al* “Detection of heavy methylation in human repetitive DNA subsets by a monoclonal antibody against 5-methylcytosine” *Biochim Biophys Acta* **951**:157-165 (1988) PMID: 2847796

Sano H *et al* “Identification of 5-methycytosine in DNA fragment immobilized on nitrocellulose paper” *Proc Natl Acad Sci USA* **77**:3581-85 (1980) PMID: 6251470

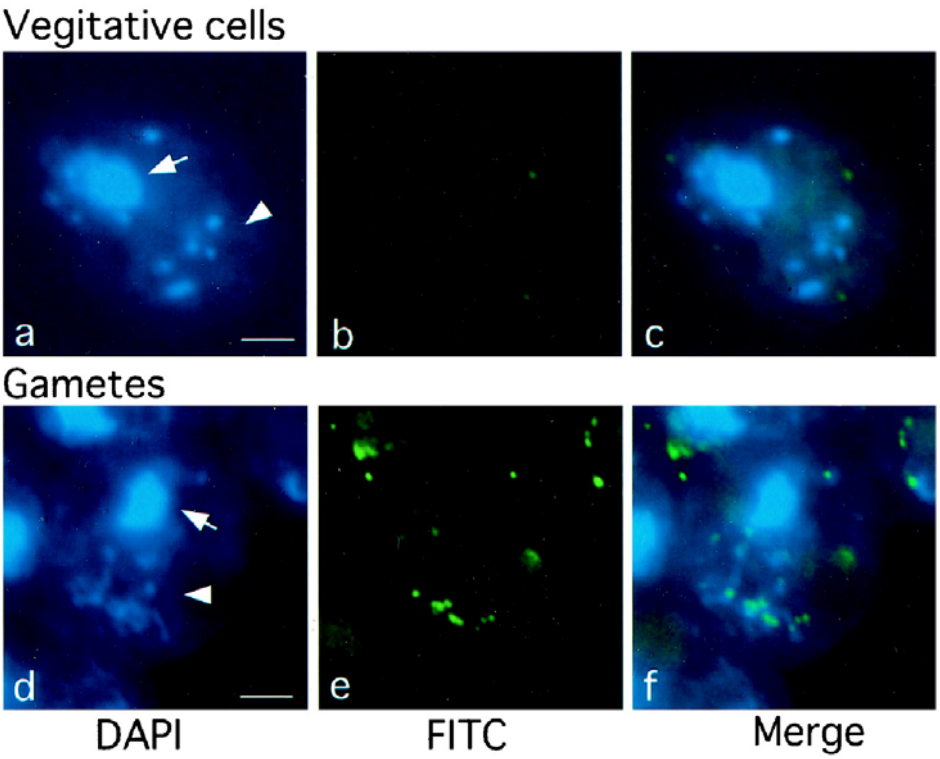

Fig. Methylation of chloroplast DNA visualized by immunochemistry.
Samples are Chlamidomonas me-1 cells. Left: DAPI-stained cells. Middle: Cells stained with anti-5MeC antibody and FITC-conjugated 2nd antibody. Right: Merged image. Chloroplast DNA is exclusively methylated in gamete cells.

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