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Catalog No. BAM-10-201-EX

DNA (cytosine-5) methyltransferase (mouse), Dnmt1

BACKGROUND

DNA methylation is significant for epigenetic regulation of gene expression, X chromosome inactivation, genomic imprinting, and development. Abberant methylation patterns are associated with certain human tumors and developmental abnormalities. In vertebrates, there are two types of DNA methyltransferase activities; de novo and maintenance types. Two DNA methyltransferases, Dnmt3a and Dnmt3b, are responsible for the creation of methylation patterns at an early stage of embryogenesis (de novo-type), while Dnmt1 is responsible for the maintenance of methylation patterns during replication. Dnmt1 favors to methylate the hemimethylated DNA and preferentially methylates one strand of the double-stranded DNA during its processive methylation. This product, mouse **Dnmt1** deleting the N-terminal 290 amino acid residues, was expressed using a baculovirus expression system and purified by Prof. S. Tajima and Dr. I. Suetake of Osaka University (ref.2).

Applications: 1) In vitro metylation of cytosine residues in hemimethylated DNA at 5'....CG...3'. (ref.

2) Antigen for anti-mammalian Dnmt1 antibodies.

Size: 300 units (conc.)

Form: 0.5mg protein/ml in 0.2M NaCl, 10mM HEPES (pH 7.4), 50% glycerol

activity:

Definition of specific 1 unit is defined as the amount of the enzyme that transfer 1 pmole of methyl group to

poly dI-dC substrate during 30 minutes at 37°C

Specific Activity: 17 units/ul

Greater than 95% protein determined by SDS-PAGE (CBB staining) (Fig.1) **Quality Assurance:**

Reaction Conditions: Incubate in 1 x Dnmt1 Reaction Buffer (20mM Tris-HCl, pH7.4, 0.5 mM EDTA, 0.2 mM

DTT, 5% glycerol) with 10µM S-adenosylmethionine (SAM) at 37°C

Reagents Supplied with Enzyme:

Dnmt1 Reaction Buffer (5 x) 20mM S-adenosylmethionine (SAM) which was purified by

chromatography from the commercial reagent and dissolved in H₂O.

Note: SAM is very unstable. Store at -80℃ and use it within 6 months.

Data Link: UniProtKB/Swiss-Prot P13864 (DNMT1_MOUSE)

Store at -20°C Storage:

References: This product was used in ref.1.

1) Vilkaitis G et al (2005) "Processive methylation of hemi-methylated CpG sites by mouse Dnmt1 DNA

methyl-transferase." J Biol Chem 280: 64-72 PMID: 15509558

2) Tajima S and Suetake I (1998) "Regulation and function of DNA methylation in vertebrates." J Biochem 123: 993-999 Review PMID: 9603984 (To be continued.....)



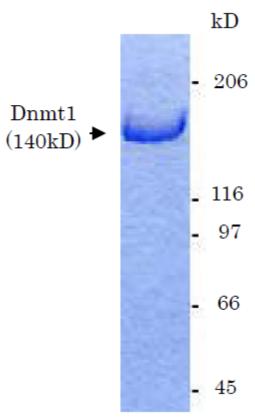


Fig.1 SDS-polyacrylamide gel electrophoresis of recombinant Dnmt1

Related Products

BAM-70-201-EX	anti-Dnmt1 (1-248) antibody, affinity-purified (rabbit polyclonal)
BAM-70-203-EX	anti-Dnmt1 (1037-1386) antibody, affinity-purified (rabbit polyclonal)
BAM-70-205-EX	anti-Dnmt3b antibody, affinity-purified (rabbit polyclonal)

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