Bio Academia
Manufacturer

AS ONE

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

#10-201 300 units

DNA methylation is significant for epigenetic regulation of gene expression, X chromosome inactivation, genomic imprinting, and development. Aberrant 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).

Uses

1) In vitro metylation of cytosine residues in hemimethylated DNA at 5'….CG…3'. (ref. 1, 2)

2) Antigen for anti-mammalian Dnmt1 antibodies.

Specification

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

Definition of specific activity: 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

Storage: Store at -20°C

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

Data Link UniProtKB/Swiss-Prot P13864 (DNMT1_MOUSE)

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 H_2O

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

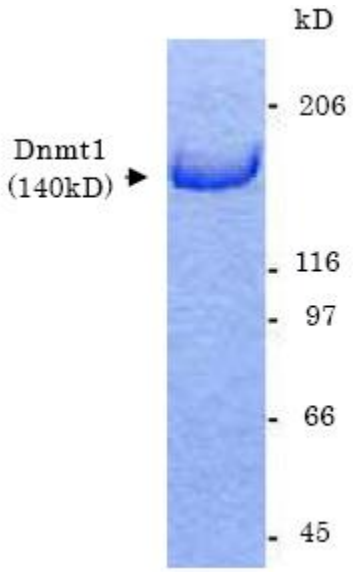

Fig.1 SDS-polyacrylamide gel electrophoresis of recombinant Dnmt1

References

This product was used in ref.1.

1. Vilkaitis G et al (2005), J Biol Chem 280: 64-72 PMID：15509558

2. Tajima S and Suetake I (1998) , J Biochem 123: 993-999 Review PMID: 9603984