

# HhaI Methyltransferase

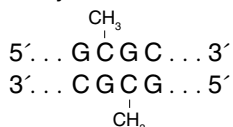


## M0217S



1,000 units 25,000 U/ml Lot: 0061311  
RECOMBINANT Store at -20°C Exp: 11/14

### Methylation Site:



**Description:** HhaI Methyltransferase modifies the internal cytosine residue (C<sup>5</sup>) in the sequence above.

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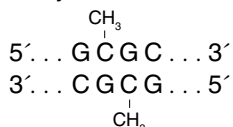


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**Description:** HhaI Methyltransferase modifies the internal cytosine residue (C<sup>5</sup>) in the sequence above.

**Source:** An *E. coli* strain that carries the cloned HhaI modification gene from *Haemophilus haemolyticus* (ATCC 10014)

Supplied in: 150 mM NaCl, 50 mM Tris-HCl (pH 7.5), 10 mM EDTA, 5 mM 2-mercapto-ethanol, 200 µg/ml BSA and 50% glycerol.

### Reagents Supplied with Enzyme:

10X HhaI Methyltransferase Reaction Buffer, 400X S-adenosylmethionine (32 mM).

**Reaction Conditions:** 1X HhaI Methyltransferase Reaction Buffer, 80 µM S-adenosylmethionine. Incubate at 37°C.

### 1X HhaI Methyltransferase Reaction Buffer:

50 mM Tris-HCl  
10 mM EDTA  
5 mM 2-mercaptoethanol  
pH 7.5 @ 25°C

**Protection Assay Conditions:** HhaI Methyltransferase is incubated with 1 µg of λ DNA in 10 µl 1X HhaI Methyltransferase Reaction Buffer, supplemented with 80 µM S-adenosylmethionine, for one hour at 37°C followed by 15 minutes at 65°C.

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The extent of protection by HhaI Methyltransferase is determined by the addition of 40 µl NEBuffer 4 supplemented with 100 µg/ml BSA, 10 mM MgCl<sub>2</sub> and 10 units of Hha I restriction endonuclease. Incubation at 37°C for 30 minutes is followed by analysis on an agarose gel.

**Unit Definition:** One unit is defined as the amount of enzyme required to protect 1 µg λ DNA in 1 hour at 37°C in a total reaction volume of 10 µl against cleavage by Hha I restriction endonuclease.

### Quality Control Assays

**16-Hour Incubation:** Incubation of 125 units of HhaI Methyltransferase with 1 µg of HindIII-digested DNA in 50 µl 1X NEBuffer 2 for 16 hours at 37°C resulted in no detectable endonuclease contamination.

**Exonuclease Activity:** Incubation of 250 units of HhaI Methyltransferase with 1 µg sonicated <sup>3</sup>H DNA (10<sup>5</sup> cpm/µg) for 4 hours at 37°C in 50 µl NEBuffer 2 [50 mM NaCl, 10 mM Tris-HCl (pH 7.9 @ 25°C), 10 mM MgCl<sub>2</sub>, 1 mM DTT] released 0.39% of the total radioactivity.

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**Storage of SAM:** S-adenosylmethionine or SAM is stored at -20°C as a 32 mM solution dissolved in 0.005 M sulfuric acid and 10% ethanol. Under these conditions SAM is stable for up to 6 months. SAM is unstable at (pH 7.5), 37°C, (1) and should be replenished in reactions incubated longer than 4 hours.

Methylation can be optimized by using fresh SAM.

### Reference:

- Hoffman, J. L. (1986) *Biochemistry* 25, 4444-4449.

### Companion Product:

S-adenosylmethionine (SAM)  
#B9003S 0.5 ml

CERTIFICATE OF ANALYSIS

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