G9a Methyltransferase

NEW ENGLAND BioLabs Inc.
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M0235S 007120713071

M0235S

RR SAM 37° Yes

100 units	**2,000 U/ml**	**Lot: 0031207**
RECOMBINANT	**Store at –20°C**	**Exp: 7/13**

Description: G9a Methyltransferase methylates lysine 9 (Lys 9) of histone H3 (1–3). Methylation occurs at the ε amino group of lysine residues. Methylation of histone H3 Lys 9 is a hallmark of silent chromatin and is globally distributed throughout the heterochromatic regions, such as centromeres and telomeres (4,5).

Source: G9a enzyme is expressed from mouse *G9a* cDNA using an *E. coli* GST fusion expression system.

Supplied in: 50 mM Tris-HCl (pH 8.0 @25°C), 5 mM $MgCl_2$, 100 mM NaCl, 4 mM dithiothreitol and 50% glycerol.

Reagents Supplied with Enzyme:
10X HMT Reaction Buffer
32 mM S-adenosylmethionine (SAM)

Reaction Conditions: 1X HMT Reaction Buffer supplemented with 160 µM S-adenosylmethionine. Incubate at 37°C.

1X HMT Reaction Buffer:
50 mM Tris-HCl
5 mM $MgCl_2$
4 mM dithiothreitol
(pH 9.0 @25°C)

Unit Definition: One unit is defined as the amount of enzyme required to catalyze the transfer of 1 pmol of methyl group to synthetic peptide substrate representing the first 17 amino acids of histone H3 in a total reaction volume of 25 µl in 10 minutes at 37°C.

Quality Assurance: Purified free of contaminating proteases.

Storage Note: S-adenosylmethionine (SAM) is stored at –20°C as a 32 mM stolution dissolved in 0.005 M sulfuric acid and 10% ethanol (pH 7.5). Under these conditions, SAM is stable for up to 6 months. SAM is unstable at 37°C and should be replenished in reactions incubated longer than 4 hours. Methylation can be optimized by using fresh SAM. Avoid freeze/thaw of enzyme.

Heat Inactivation: 65°C for 20 minutes.

References:

1. Tachibana, M. et al. (2001) *J. Biol. Chem.* 276, 25309–25317.
2. Patnaik, D et al. (2004) *J. Biol. Chem.* 279, 53248–53258.
3. Esteve, P.O. et al. (2005) *Nucl. Acids Res.* 33, 3211–3223.
4. Strahl and Allis (2000) *Nature,* 403, 41–45.
5. Noma, K. et al. (2001) *Science* 293, 1150–1155.

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CERTIFICATE OF ANALYSIS