

Recombinant EHMT2 (G9a) protein

Catalog No: 31410, 31810

Expressed In: Baculovirus

Quantity: 20, 1000 µg

Concentration: 0.5 µg/µl

Source: Human

Buffer Contents: Full length recombinant EHMT2 (G9a) protein expressed in Sf9 cells and supplied in 25 mM HEPES-NaOH pH 7.5, 300 mM NaCl, 5% glycerol, 0.04% Triton X-100, 0.2 mM TCEP.

Background: EHMT2 (G9a) is a histone methyltransferase that specifically mono- and dimethylates Lys9 of histone H3 (H3K9me1 and H3K9me2, respectively) in euchromatin. H3K9me represents a specific tag for epigenetic transcriptional repression by initiating recruitment of HP1 proteins to methylated histones. EHMT2 (G9a) also mediates monomethylation of Lys56 of histone H3 (H3K56me1) in G1 phase and regulates DNA replication by promoting the interaction between histone H3 and PCNA. EHMT2 (G9a) also weakly methylates Lys27 of histone H3 (H3K27me). In addition, EHMT2 (G9a) is required for DNA methylation. However, the histone methyltransferase activity is not required for DNA methylation, suggesting that these 2 activities function independently. EHMT2 (G9a) is most likely targeted to histone H3 by different DNA-binding proteins like E2F6, MGA, MAX and/or DP1. EHMT2 (G9a) may also methylate histone H1. In addition to histone methyltransferase activity, EHMT2 (G9a) also methylates non-histone proteins. It has been shown to mediate dimethylation of Lys373 of p53 and also methylates CDYL, WIZ, ACIN1, DNMT1, HDAC1, ERCC6, KLF12 and itself.

Protein Details: EHMT2 (G9a) is a histone methyltransferase that is specific to lysine 9 of histone H3 (H3K9). Methylation of H3K9 is a signal of transcriptional repression. Recombinant EHMT2 (G9a) protein (accession number NP_006700.3) was expressed in Sf9 cells and contains an N-terminal FLAG-Tag with a molecular weight of 134 kDa. The recombinant protein is > 85 % pure by SDS-PAGE.

Application Notes: Recombinant EHMT2 (G9a) is suitable for use in the study of enzyme kinetics, inhibitor screening, and selectivity profiling.

HMT Assay Conditions: 1 µM H3 (1-21) peptide was incubated with different concentrations of EHMT2 (G9A) protein in a 10 µl reaction system containing 50 mM Tris-HCl pH 8.6, 0.02% Triton X-100, 2 mM MgCl₂, 1 mM TCEP and 50 µM SAM for 3 hours, then 10 µl H3K9me2 antibody and SA-XL665 mixture (each 1:100 dilution in HTRF Detection Buffer) was added to each reaction system and incubated for 30 min. All the operations and reactions were performed at room temperature. HTRF assay was used for detection.

References:

This product was used in the following publications:

Mol. Cell. (2016). 61(2): 247-59. PMID: 26778125. (Histone Methyltransferase / HMT Assay)

Cell Death Dis. (2018). 9(10): 1038. PMID: 30305606.

Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is guaranteed for 6 months from date of receipt.

This product is for research use only and is not for use in diagnostic procedures.

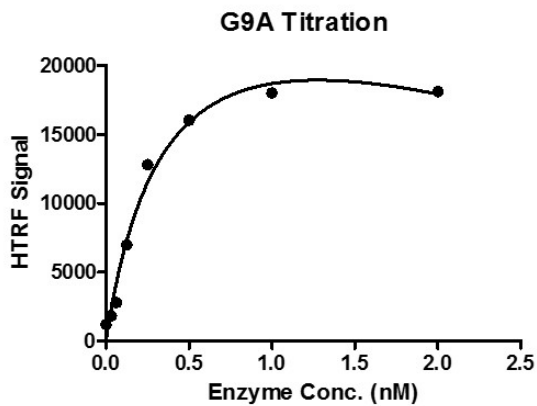


Recombinant EHMT2 (G9a) protein gel.

EHMT2 (G9a) protein was run on an 8% SDS-PAGE gel and stained with Coomassie Blue.

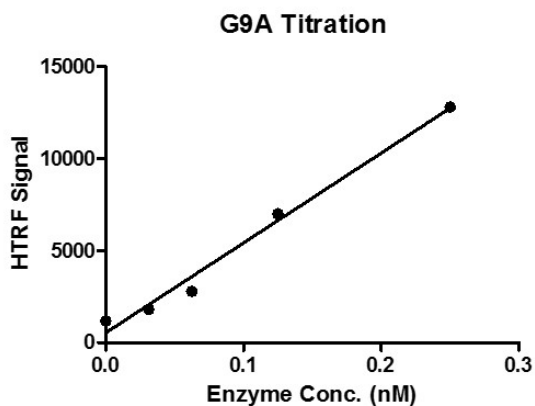
MW: 134 kDa

Purity: > 85%



Recombinant EHMT2 (G9a) HTRF activity assay

1 μ M H3 (1-21) peptide was incubated with EHMT2 (G9a) in reaction buffer for 3 hours at room temperature. H3K9me2 antibody was used to detect reaction products.



Recombinant EHMT2 (G9a) HTRF activity assay

1 μ M H3 (1-21) peptide was incubated with EHMT2 (G9a) in reaction buffer for 3 hours at room temperature. H3K9me2 antibody was used to detect reaction products.