PRODUCT INFORMATION

G9a-like protein (human recombinant)

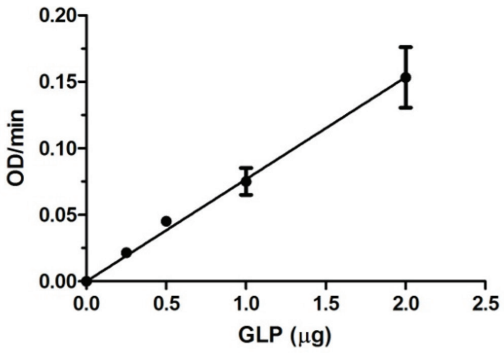
Item No. 10755 • Batch No. XXXX

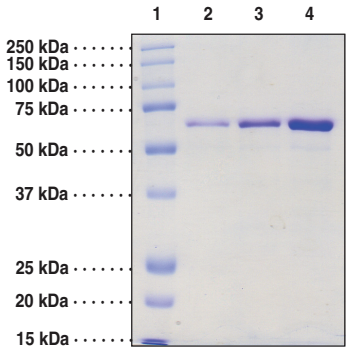
Overview and Properties

Synonyms:	EHMT1, Euchromatic Histone-Lysine N-Methyltransferase 1, Eu HMTase 1, GLP, KMT1D
Source:	Recombinant N-terminal GST-tagged protein expressed in *E. coli*
Amino Acids:	1004-1298 (N-terminal truncation)
Uniprot No.:	Q9H9B1
Molecular Weight:	60.3 kDa
Storage:	-80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein
Stability:	≥1.5 years
Purity:	***batch specific*** (≥95% estimated by SDS-PAGE)
Supplied in:	***batch specific***
Protein Concentration:	***batch specific*** mg/ml
Activity:	***batch specific*** U/ml
Specific Activity:	***batch specific*** U/mg
Unit Definition:	One unit is defined as the amount of enzyme required to transfer one methyl group to Histone H3 per minute as determined using 100 µM Histone H3 (1-21) peptide at 37°C using Cayman's Methyltransferase Colorimetric Assay Kit (Item No. 700140).

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image(s)





Lane 1: MW Markers
Lane 2: GLP (1 µg)
Lane 3: GLP (2 µg)
Lane 4: GLP (5 µg)

Representative gel image shown; actual purity may vary between each batch but protein will be ≥95% pure.

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Description

Post-translational modification of histones by methylation of lysine residues can promote transcriptional activation or repression. G9a-like protein (GLP) and G9a are SET domain-containing methyltransferases that specifically mono- and di-methylate histone H3 at lysine 9 (H3K9).[1,2] Methylation of H3K9 by a GLP/G9a heteromeric complex regulates gene expression by silencing euchromatin.[3] GLP and G9a share 80% sequence identity in their SET domains. Structure-activity relationship (SAR) studies have been employed to design potent and selective inhibitors of these proteins, including BIX-01294 and UNC0638, with IC_{50} values in the nanomolar range.[4]

References

1. Wu, H., Min, J., Lunin, V.V., *et al*. Structural biology of human H3K9 methyltransferases. *PLoS One* **5(1)**, e8570 (2010).
2. Patnaik, D., Chin, H.G., Estève, P.O., *et al*. Substrate specificity and kinetic mechanism of mammalian G9a histone H3 methyltransferase. *J. Biol. Chem.* **279(51)**, 53248-53258 (2004).
3. Tachibana, M., Matsumura, Y., Fukuda, M., *et al*. G9a/GLP complexes independently mediate H3K9 and DNA methylation to silence transcription. *EMBO J.* **27(20)**, 2681-90 (2008).
4. Chang, Y., Zhang, X., Horton, J.R., *et al*. Structural basis for G9a-like protein lysine methyltransferase inhibition by BIX-01294. *Nat. Struct. Mol. Biol.* **16(3)**, 312-317 (2009).

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