

PRODUCT INFORMATION



G9a-like protein (human recombinant)

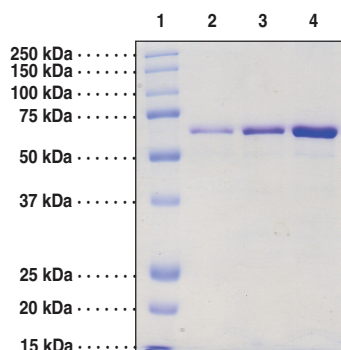
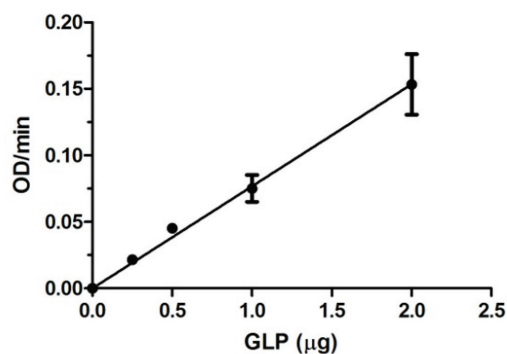
Item No. 10755 • Batch No. XXXX

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.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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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 UNCO638, with IC₅₀ 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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