

PRODUCT INFORMATION

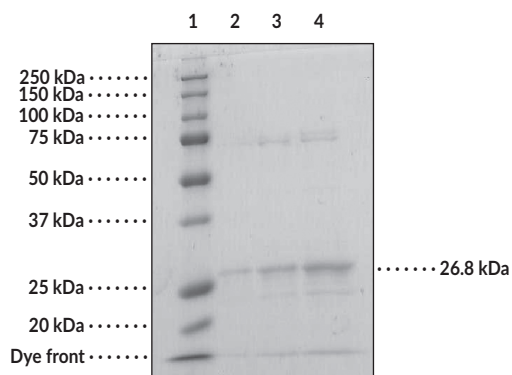


O⁶-methylguanine-DNA Methyltransferase (human, recombinant) Item No. 11176

Overview and Properties

Synonym: MGMT
Source: Recombinant N-terminal His-tagged protein expressed in *E. coli*
Uniprot No.: B4DEE8
Amino Acids: 2-238 (full length)
Molecular Weight: 26.8 kDa
Storage: -80°C (as supplied)
Stability: ≥6 months
Purity: *batch specific* (≥50% estimated by SDS-PAGE)
Supplied in: *batch specific*
Protein
Concentration: *batch specific* mg/ml

Image



Lane 1: MW Markers
Lane 2: MGMT (1 µg)
Lane 3: MGMT (2 µg)
Lane 4: MGMT (4 µg)

SDS-PAGE Analysis of O⁶-methylguanine-DNA Methyltransferase.

Representative gel image shown; actual purity may vary between each batch.

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
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Description

O⁶-methylguanine-DNA Methyltransferase (MGMT) is a DNA repair enzyme responsible for demethylating O⁶-methylguanine (O⁶-mG).¹ The methylation of guanine at O⁶ to form O⁶-mG allows base-pairing to thymine rather than cytosine during DNA replication. MGMT prevents mutations by transferring the methyl group from O⁶-mG to MGMT cysteine 145, restoring guanine. This transfer results in a covalent bond between MGMT cysteine 145 and the methyl group, and so MGMT is a single-turnover, "suicide" enzyme. The assay used to test MGMT is the demethylation of a synthesized, double-stranded, DNA oligonucleotide.² Demethylation removes an O⁶-methyl group to expose a restriction site for the restriction endonuclease PvuII. Lanes A-E show 200 ng of methylated dsDNA treated with increasing amounts of MGMT prior to PvuII digestion.

References

1. Mitra, S. MGMT: A personal perspective. *DNA Repair (Amst)* **6(8)**, 1064-1070 (2007).
2. Watts, G.S., Pieper, R.O., Costello, J.F., *et al.* Methylation of discrete regions of the O⁶-methylguanine DNA methyltransferase (MGMT) CpG island is associated with heterochromatinization of the MGMT transcription start site and silencing of the gene. *Mol. Cell. Biol.* **17(9)**, 5612-5619 (1997).

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