

# TREVIGEN® Product Data

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## Mouse 3-Methyladenine DNA Glycosylase Type II (Aag protein)

**Catalog #:** 4090-100-EB

**Contents:** 4090-100-01 Aag protein                      **Size:** 100 Units  
3900-500-09 10X REC™ Buffer 9                      1 ml

**Description:** Mouse Aag is a 36 kDa constitutively expressed (1,000-2,000 copies/cell) protein. It acts on 3-methyladenine, 3-methylguanine, 7-methylguanine, hypoxanthine, and a number of other substrates.

**Source:** Purified from *E. coli* containing a recombinant plasmid encoding the mouse Aag protein.

**Unit Definition:** One Unit cleaves 1 pmole of a <sup>32</sup>P-labeled oligonucleotide probe containing hypoxanthine within an oligonucleotide duplex in one hour at 37°C.

**Specificity:** Mouse Aag catalyzes the excision of the following forms of DNA damage: 3-methyladenine, 3-methylguanine, 7-methylguanine, hypoxanthine, and 1,N<sup>6</sup>-ethenoadenine. It may also function on the following forms of DNA damage: 7- and 3-ethylpurines, 1-carboxyethyladenine, 7-carboxyethylguanine, O<sup>2</sup>-methylpyrimidines, 7(2-ethoxyethyl)guanine, 7(2-hydroxyethyl)guanine, 7(2-chloroethyl)guanine, 1,2-bis(7-guanyl)ethane, 3-ethylthioethylpurines, N<sup>2</sup>,3-ethenoguanine, N<sup>2</sup>,3-ethanoguanine, 5-hydroxymethyluracil, 5-formyluracil, 3,N<sup>4</sup>-ethenocytosine, 1,N<sup>2</sup>-ethenoguanine, 3,N<sup>2</sup>-ethenoguanine, chloroacetaldehyde cyclic adducts.

**Assay Conditions:** 1X REC Buffer 9 (10 mM HEPES-KOH (pH 7.4), 100 mM KCl, 1 mM EDTA, 1 mM EGTA, and 0.1 mM DTT), 4 pmole <sup>32</sup>P Hypoxanthine Oligonucleotide (Cat# 3855-100-01), 4 pmole Oligo Complement C (Cat# 3849-100-03), and serial dilutions of enzyme in a reaction volume of 20 µl are incubated for 1 hour at 37°C. For analysis, 10 µl of 3X REC Alkali Loading Buffer (Cat# 4017-500: 300 mM NaOH, 97% formamide, and 0.2% bromophenol blue) are added, the samples are heated to 95°C for 10 minutes then fast cooled to 4°C, and the cleavage products are resolved by 20% denaturing polyacrylamide gel electrophoresis. The bands are cut out and radioactivity counted to quantify cleavage products.

**Storage Buffer:** 10 mM HEPES-KOH (pH 7.4), 100 mM KCl, 1 mM EDTA, 1 mM DTT, 0.2 mg/ml BSA, and 50% (v/v) glycerol.

**Storage Conditions:** Store at -20°C in a manual defrost freezer.

**References:**

1. Mattes, W.B., C.-S. Lee, J. Laval, and T.R. O'Conner. 1996. Excision of DNA adducts of nitrogen mustards by bacterial and mammalian 3-methyladenine-DNA glycosylases. *Carcinogenesis* 17:643-648.
2. Samson, L., B. Derfler, M. Boosalis, and K. Call. 1991. Cloning and characterization of a 3-methyladenine DNA glycosylase cDNA from human cells whose gene maps to chromosome 16. *Proc. Natl. Acad. Sci. USA* 88:9127-9131.

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