

# 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 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<sub>6</sub>-etheno-adenine. It may also function on the following forms of DNA damage: 7- and 3-ethylpurines, 1-carboxyethyladenine, 7-carboxyethylguanine, O<sub>2</sub>-methylpyrimidines, 7(2-ethoxyethyl)guanine, 7(2-hydroxyethyl)guanine, 7(2-chloroethyl)guanine, 1,2-bis(7-guanyl)ethane, 3-ethylthio-ethylpurines, N<sub>2</sub>,3-ethenoguanine, N<sub>2</sub>,3-ethanoguanine, 5-hydroxymethyluracil, 5-formyl-uracil, 3,N<sub>4</sub>-ethenocytosine, 1,N<sub>2</sub>-ethenoguanine, 3,N<sub>2</sub>-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 of labeled hypoxanthine oligonucleotide annealed to the complement oligonucleotide, and serial dilutions of enzyme in a reaction volume of 20 µl are incubated for 1 hour at 37°C. To complete cleavage of abasic site, fresh 1N NaOH is added to final concentration of 166 mM then heated for 15 minutes at 95°C. For analysis, 24 µl of 2X Loading Buffer (20 mM EDTA, 95% formamide, and 0.13% 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, and percent cleavage quantified.

**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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**Related Products:**

Catalog#	Description	Size
4020-100-EB	Human DNA Polymerase $\beta$	100 U
4025-100-EB	<i>E. coli</i> Uracil-N-Glycosylase (UNGase)	100 U
4040-100-EB	<i>E. coli</i> Formamidopyrimidine-DNA Glycosylase (Fpg)	500 U
4045-01K-EB	<i>E. coli</i> Endonuclease III (Thymine Glycol-DNA Glycosylase)	1000 U
4050-100-EB	<i>E. coli</i> Endonuclease IV (nfo protein)	100 U
4055-100-EB	T4 Endonuclease V (T4-Pyrimidine Dimer Glycosylase/T4-PDG)	10 <sup>5</sup> U
4060-01K-EB	<i>E. coli</i> Endonuclease VIII	1000 U
4065-100-EB	Chlorella Virus Pyrimidine Dimer Glycosylase (cv-PDG)	1000 U
4070-500-EB	Thermostable TDG enzyme	500 U
4100-100-EB	<i>S. pombe</i> UVDE	100 $\mu$ l
4110-01K-EB	Human Apurinic/Apyrimidinic Endonuclease (hAPE)	1000 U
4120-100-EB	Human FEN-1 (Flap Endonuclease)	100 U
4135-100-EB	Human Ku 70/80 Complex	250 U
4130-100-EB	Human 8-oxoGuanine DNA Glycosylase (hOGG1)	100 U

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DNA Glycosylase Type II  
(Aag protein)

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