TREVIGEN® Product Data

For Research Use Only. Not For Use In Diagnostic Procedures

E. coli MutY DNA Glycosylase

Catalog #: 4000-500-EB

Contents:			
4000-500-01	*E. coli* MutY DNA Glycosylase	**Size:**	5000 Units
3900-500-04	10X REC™ Buffer 4		1 ml

Description: *E. coli* MutY acts together with Fpg to prevent the potentially mutagenic consequences of 8-oxo-dG lesions. 8-oxo-dG lesions escaping repair by Fpg frequently pair with A during DNA replication, producing an 8-oxo-dG:A mispair. MutY removes the A from this base pair to initiate base excision repair. In the absence of MutY, DNA replication after an 8-oxo-dG:A mismatch results in thymine incorporation opposite the adenine in one of the daughter strands, creating a fixed mutation. MutY has an associated AP lyase activity.

Source: Purified from *E. coli* containing a recombinant plasmid harboring the *E. coli* MutY gene.

Unit Definition: One unit of enzyme cleaves 1 pmole of an oligonucleotide duplex containing an A/G mismatch in 1 hour at 37 ºC. Only the strand with the A is cleaved.

Assay Conditions & Analysis: 4 pmoles of A/G mismatch oligonucleotide set with the A oligo end-labeled, 1X REC™ Buffer 4 (10 mM HEPES-KOH (pH 7.4), 100 mM KCl, 10 mM EDTA), and serial dilutions of enzyme in a 20 µl reaction volume are incubated for 1 hour at 37 ºC. To complete cleavage of abasic site, fresh NaOH is added to final concentration of 166 mM then heated for 15 minutes at 95 ºC. For analysis, 24 µl of 2X Loading Buffer (20 mM EDTA, 97% formamide, and 0.2% bromophenol blue) is added, the samples are heated at 95 ºC for 5 min then fast cooled to 4 ºC, and the cleavage products are resolved by 20% denaturing polyacrylamide gel electrophoresis. The bands are analyzed to quantify the cleavage products.

Storage Buffer: 20 mM Tris pH 7.5, 100 mM NaCl, 1 mM EDTA, 1 mM DTT, and 50% (v/v) glycerol.

Storage Conditions: Store at -20 ºC in a manual defrost freezer. For long term storage, freeze in working aliquots at -80 ºC. Avoid repeated freeze-thawings. Enzyme may be diluted in storage buffer containing 0.1 mg/ml BSA and stored at -20 ºC for 2 weeks of experimental use.

References:

1. Lu, A. and I. Hsu. 1992. Detection of single DNA base mutations with mismatch repair enzymes. Genomics **14**:249-255.
2. Friedberg, E.C., G.C. Walker, and W. Siede. 1995. DNA Repair and Mutagenesis. American Society of Microbiology. Washington, D.C: ASM Press.
3. Hsu, I., W.E. Highsmith, J. Xu, and D. Kong. 1998. Mismatch cleavage detects base deletion in cystic fibrosis gene. Biotechniques **25**:692-696.

E12/10/09v1

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Related Products:

Catalog#	Description	Size
4020-100-EB	Human DNA Polymerase β	100 U
4025-100-EB	*E. coli* Uracil-N-Glycosylase (UNGase)	100 U
4040-100-EB	*E. coli* Formamidopyrimidine-DNA Glycosylase (Fpg)	500 U
4045-01K-EB	*E. coli* Endonuclease III (Thymine Glycol-DNA Glycosylase)	1000 U
4050-100-EB	*E. coli* Endonuclease IV (nfo protein)	100 U
4055-100-EB	T4 Endonuclease V (T4-Pyrimidine Dimer Glycosylase/T4-PDG)	10^5 U
4060-01K-EB	*E. coli* Endonuclease VIII	1000 U
4065-100-EB	Chlorella Virus Pyrimidine Dimer Glycosylase (cv-PDG)	1000 U
4070-500-EB	Thermostable TDG Protein (Thymine DNA Glycosylase)	500 U
4100-100-EB	*S. pombe* UVDE	100 µl
4110-01K-EB	Human Apurinic/Apyrimidinic Endonuclease (hAPE)	1000 U
4120-100-EB	Human FEN-1 (Flap Endonuclease)	100 U
4145-100-EB	*E. coli* Photolyase	2000 U
4130-100-EB	Human 8-oxoGuanine DNA Glycosylase (hOGG1)	100 U
4135-100-EB	Human Ku 70/80 Complex	250 U

Concentration:
Units:
Specific Activity:

***E. coli* MutY**
DNA Glycosylase
Catalog #: 4000-500-EB

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