TREVIGEN® Product Data

For Research Use Only. Not For Use In Diagnostic Procedures

E. coli Mismatch Uracil DNA Glycosylase (Mug protein)

Catalog #: 4125-100-EB

Contents: 4125-100-01 Mug protein
3900-500-06 10X REC™ Buffer 6

Size: 100 Units
1 ml

Description: *E. coli* Mug is an 18 kD constitutively expressed protein. The Mug protein can remove a uracil base from within a U:G mismatch as well as act on 3, N4-ethenocytosine-G mismatches (eC:G).

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

Unit Definition: One Unit cleaves 1 pmole of a labeled oligonucleotide probe containing 3,N4-ethenocytosine within an oligonucleotide duplex in one hour at 37°C.

Specificity: *E. coli* Mug catalyzes the excision of the following forms of DNA damage: 3,N4-ethenocytosine in double or single stranded oligonucleotides. It also excises Uracil in Uracil-Guanine mismatches only in double stranded oligonucleotides.

Assay Conditions: 1X REC Buffer 6 (20 mM Tris-Cl (pH 8.0), 0.1 mg/ml BSA, 1 mM EDTA, and 1 mM DTT), 4 pmole of labeled 3,N4-ethenocytosine 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 the abasic site, fresh 1N NaOH is added to a 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 and the samples heated to 95°C for 10 min then fast cooled to 4°C. The cleavage products are resolved by 20% denaturing polyacrylamide gel electrophoresis, and percent cleavage quantified.

Storage Buffer: 20 mM Tris-Cl (pH 8.0), 2 mM EDTA, 2.5 mM 2-mercaptoethanol, 1 mM PMSF and 50% (v/v) glycerol.

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

References:

1. Lutsenko, E., and A. S. Bhagwat. 1999. The role of the *Escherichia coli* mug protein in the removal of uracil and 3,N4-ethenocytosine from DNA. J. Biol. Chem. **274**:31034-31038.
2. Saparbaev, M. and J. Laval. 1998. 3,N4-ethenocytosine, a highly mutagenic adduct, is a primary substrate for *Escherichia coli* double-stranded uracil-DNA glycosylase and human mismatch-specific thymine-DNA glycosylase. Proc. Natl. Acad. Sci. USA **95**:8505-8513.

© 2009 Trevigen, Inc. All Rights Reserved. Trevigen is a registered trademark of Trevigen, Inc.

E7/12/10v1

TREVIGEN®
8405 Helgerman Court, Gaithersburg, MD 20877 USA Voice: 1-800-TREVIGEN
(1-800-873-8443) • 301-216-2800
Fax: 301-560-4973 • e-mail: info@trevigen.com • www.trevigen.com

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
4130-100-EB	Human 8-oxoGuanine DNA Glycosylase (hOGG1)	100 U
4135-250-01	Human Ku 70/80 Complex	250 U

Escherichia coli
Mismatch Uracil Glycosylase (Mug Protein)
Catalog#: 4125-100-EB
Storage: -20 °C
(Manual Defrost Freezer)
TREVIGEN®
1-800-873-8443