TREVIGEN® Product Data

For Research Use Only. Not For Use In Diagnostic Procedures

E. coli Endonuclease IV (Nfo protein)

Catalog #: 4050-100-EB

Contents: 4050-100-01	Endonuclease IV	**Size:**	100 Units
3900-500-01	10X REC™ Buffer 1		1 ml

Description: Endonuclease IV is a class II AP endonuclease with no associated N-glycosylase activity (see reverse).

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

Unit Definition: One Unit cleaves 1000 pmole of a labeled oliognucleotide probe containing an AP within an oligonucleotide duplex in one hour at 37°C.

Specificity: Endonuclease IV cleaves AP-sites and removes phosphoglyco-aldehyde, deoxyribose-5-phosphate, 4-hydroxy-2-pentanal, and phosphate groups from the 3' ends of DNA. It is not stimulated by cofactors such as Mg^{2+} or Ca^{2+}, but is inhibited by EDTA (suggesting a metal ion cofactor). Endonuclease IV exhibits exonuclease activity at high protein concentrations. The working concentration may need to be optimized by serially diluting the enzyme (a 1:10 dilution is recommended as a good starting point).

Assay Conditions: 1X REC Buffer 1 (10 mM HEPES-KOH, pH 7.4, 100 mM KCl), 0.1 mg/ml BSA, 4 pmole of a labeled AP oligonucleotide, annealed to complement oligonucleotide, and serial dilutions of enzyme in a 20 µl reaction volume are incubated for 1 hour at 37°C. The cleavage products are resolved by 20% denaturing polyacrylamide gel electrophoresis, and percent cleavage quantified.

Storage Buffer: 50 mM MOPS-NaOH, pH 8.0, 50 mM NaCl, and 50% (v/v) glycerol.

Storage Conditions: Store at -20°C in a manual defrost freezer. For long term storage, freeze in working aliquots at -80°C. Avoid repeated freeze-thaw cycling.

References:

1. Doetsch, P.W. and R.P. Cunningham. 1990. The enzymology of apurinic/ apyrimidinic endonucleases. Mutat Res **236**:173-201.

E10/27/10v1

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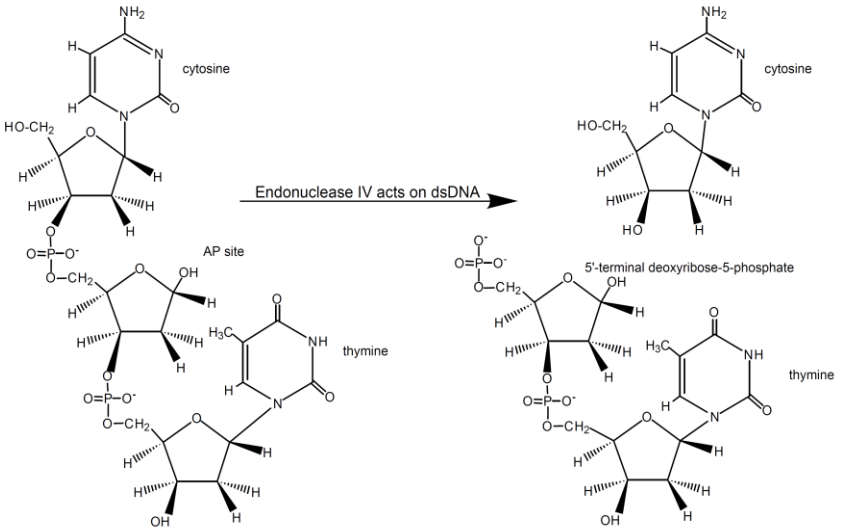
2. Cunningham, R.P., S.M. Saporito, S.G. Spitzer, and B. Weiss. 1986. Endonuclease IV (nfo) mutant of *Escherichia coli*. J Bacteriol. **168**:1120-27.
3. Friedberg, E.C., G.C. Walker, and W. Siede. 1995 in DNA Repair and Mutagenesis, American Society of Microbiology. Washington, D.C.: ASM Press.
4. Levin, J.D., R. Shapiro, and B. Demple. 1991. Metalloenzymes in DNA repair: *Escherichia coli* endonuclease IV and *Saccharomyces cerevisiae*. J Biol Chem **266**:22893-898.



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
4090-100-EB	**Mouse 3-mA DNA Glycosylase (Aag 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

E. coli Endonuclease IV

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Storage: -20 ºC

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