

<b>Catalog #</b>	3432	3435
<b>Package Size</b>	500 Units	2500 Units
<b>Concentration</b>	10 units/μl	

## Description

Fpg (formamidopyrimidine [fapy]-DNA glycosylase) (also known as 8-oxoguanine DNA glycosylase), a key enzyme in the DNA base excision repair pathway (BER), catalyzes the excision of a broad spectrum of modified purines such as formamidopyrimidine and 8-oxoguanine. Fpg has both DNA glycosylase activity that removes the mutated base and AP-lyase activity that releases ribose, leaving both 5'- and 3'-phosphorylated ends in the DNA (1, 2). Fpg protein possesses a zinc finger motif at the C-terminus and this region is responsible for the DNA binding and AP-lyase activity. In addition, its N-terminal proline was found to act as a nucleophile to produce a Schiff base intermediate, which is essential for enzyme action (3).

## Applications

- Single cell gel electrophoresis (Comet assay) (4, 5)
- DNA repair.
- DNA nicking and nick translation.

## Protein purity

The physical purity of this enzyme is ≥98% as assessed by SDS-PAGE with Coomassie® blue staining (see figure below).

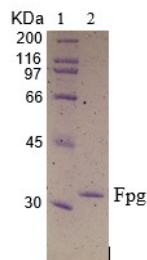


Fig: Lane 1. Protein marker and lane 2. Fpg.

## Product Source

*E. coli* BL21 (DE3) strain expressing the cloned *E. coli* Fpg gene.

## Product Includes

- Fpg
- 10x Fpg buffer
- 0.1 mg/ml BSA

## 1x Fpg reaction buffer

10 mM HEPES-KOH  
100 mM KCl  
10 mM MgCl<sub>2</sub>  
1 mM DTT  
(pH 7.4 @ 25°C)

## Storage Buffer

50 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, pH 7.5 @ 25°C

## Storage Temperature

-20°C

## Heat inactivation

65°C for 15 min

## Unit Definition

One unit is defined as the amount of enzyme required to cleave 1 pmol of a 50-mer oligonucleotide duplex containing a single 8-oxoguanine base paired with a cytosine in a total reaction volume of 10 μl at 37°C for 1 hr.

## Quality Control assays

Fpg is free from detectable contaminating nuclease activities.

## References

1. Tchou, J. et al. (1994). *J. Biol. Chem.* 269, 15318-15324.
2. Hatahet, Z. et al. (1994). *J. Biol. Chem.* 269, 18814-18820.
3. Zharkov, D. et al. (1997) *J. Biol. Chem.* 272, 5335-5341.
4. Singh, N. et al. (1961). *Experimental Cell Research.* 175, 184-191.
5. Collins, A. et al. (1993). *Carcinogenesis.* 14, 1733-1735.