

Fpg Protein from Escherichia coli, Recombinant

Cat. No. NATE-0466

Lot. No. (See product label)

Introduction

Description

Fpg protein, a key enzyme in the DNA base excision repair pathway (BER), catalyses the excision of a broad spectrum of modified purines such as formamidopyrimidine (Fapy) and 8-oxoguanine (8-oxo-G). Fpg possess 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. Several analytical methods based on Fpg protein activity in vitro were developed for detection and quantitation of oxidative damage to DNA mainly for FapyA, FapyG and 8-oxo-G. The fpg gene was cloned by Boiteux, et al. Fpg protein possess a zinc finger motif at its C-terminus (one zinc atom per molecule). 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.

Synonyms

Fapy-DNA glycosylase; deoxyribonucleate glycosidase; 2,6-diamino-4-hydroxy-5N-formamidopyrimidine-DNA glycosylase; 2,6-diamino-4-hydroxy-5 (N-methyl)formamidopyrimidine-DNA glycosylase; formamidopyrimidine-DNA glycosylase; DNA-formamidopyrimidine glycosidase; Fpg protein; DNA-formamidopyrimidine glycosylase; EC 3.2.2.23; 78783-53-6; MutM

Product Information

Species

Escherichia coli

Source

E. coli

Form

buffered aqueous glycerol solution; Solution in 50% glycerol containing 50 mM potassium HEPES, pH 7.5, 1 mM DTT, 1 mM EDTA, and 200 mM NaCl.

EC Number

EC 3.2.2.23

CAS No.

78783-53-6

Molecular Weight

mol wt 30.2 kDa (269 amino acids, predicted from the nucleotide sequence)

Activity

>20 ,000 units/mg protein

Pathway

Base excision repair, organism-specific biosystem; Base excision repair, conserved biosystem; Base excision repair, organism-specific biosystem; Base excision repair, conserved biosystem

Unit Definition

One unit will cleave 50% of 0.5 pmol of double-stranded DNA oligomer substrate (8-oxoguanine—mutated) in 10 min at 25°C.

Storage and Shipping Information

Storage

–20°C