

T4 Endonuclease V (T4 PDG)

Cat. No. TEVG-0001

Lot. No. (See product label)

Introduction

Description

T4 Endonuclease V is a bifunctional DNA repair enzyme with DNA N-glycosylase and AP lyase activities. It recognizes UV-induced cis-syn cyclobutane pyrimidine dimers in DNA.

Applications

DNA damage studies; single-cell gel electrophoresis (comet assay).

Synonyms

T4 PDG; T4 Endonuclease V; Pyrimidine Dimer Glycosylase; T4 Pyrimidine DNA Glycosylase

Product Information

Species

T4 phage

Source

T4 phage

Molecular Weight

16.1 kDa

Purity

≥95% by SDS-PAGE

Activity

1 U/μL

Concentration

1 U/μL

Contaminants

Nonspecific DNase: Not detected. E. coli host genomic DNA: <0.05 copies/U.

Specificity

Recognizes cis-syn cyclobutane pyrimidine dimers generated by UV irradiation.

Function

Removes UV-induced pyrimidine dimers through DNA N-glycosylase activity and cleaves the resulting AP site through AP lyase activity.

Substrates

DNA containing UV-induced cis-syn cyclobutane pyrimidine dimers.

Unit Definition

One unit is the amount of enzyme required to convert 0.5 μg of UV-irradiated supercoiled pUC19 DNA to >95% nicked plasmid in a 20 μL reaction after 30 minutes at 37°C. Nicking is evaluated by agarose gel electrophoresis, and the irradiated plasmid contains an average of 3-5 pyrimidine dimers.

Reaction

Pyrimidine-dimer DNA → AP-site DNA + released pyrimidine dimer; AP-site DNA → one-nucleotide DNA gap with cleaved phosphodiester backbone.

Advantages

Bifunctional DNA N-glycosylase/AP lyase activity; protein purity ≥95%; no detectable nonspecific DNase; low residual host genomic DNA.

Components

500 U package: T4 Endonuclease V (T4 PDG), 1 U/μL: 500 μL 10× T4 Endonuclease V Reaction Buffer: 1 mL 1,000 U package: T4 Endonuclease V (T4 PDG), 1 U/μL: 1 mL 10× T4 Endonuclease V Reaction Buffer: 2 mL

Usage

For enzymatic analysis of UV-induced DNA damage and comet-assay workflows.

Usage and Packaging

Package

500 U 1,000 U

Storage and Shipping Information

Storage

Store at -25°C to -15°C. Shelf life: 1 year.