abcam

Product datasheet

Recombinant E. coli UNG protein kit ab215390

Overview

Product name Recombinant E. coli UNG protein kit

Product overview E. coli UNG protein kit (ab215390) catalyzes the release of free Uracil from Uracil-containing DNA. UNG efficiently hydrolyzes uracil from single-stranded or double-stranded DNA, but not from oligomers (6 fewer bases). It is active over a broad pH range with an optimum at pH-8.0, doesn't require divalent cation, and is inhibited by high ionic strength (>200 mM). The abasic sites formed in DNA by UNG may be cleaved by heat, alkali-treatment or endonucleases that cleave specifically at abasic sites. This product can be used for: Glycosylase mediated single nucleotide polymorphism detection (GMPD). Site-directed mutagenesis. As a probe for protein-DNA interaction studies. Rapid and efficient cloning of PCR products. Elimination carry-over contamination in PCR. Inactivated by heating at 95°C for 10min. Enzyme activity is partially restored at temperatures lower than 55°C.

Notes 1 Unit is defined as the amount of UDG enzyme that catalyzes release of 60 pmol of Uracil per minute from double-stranded, uracil-containing DNA in a total reaction volume of 50 µL in 30 minutes at 37°C in 1X UNG Reaction Buffer (200 mM Tris-HCl (pH 8.0 at 25°C), 10 mM DTT and 10 mM EDTA) with 1 Unit of UNG and 0.2 µg [3H]-Uracil DNA (104- 105 cpm/µg).

The specific activity is 5 U/µL.

The UNG protein was purified by standard chromatographic techniques.

Properties

Storage instructions Store at -20°C. Please refer to protocols.

Components	2000 units
10X UNG Reaction Buffer	1 x 2ml
UNG Enzyme	1 vial
UNG Storage Buffer	1 x 2ml

Function Excises uracil residues from the DNA which can arise as a result of misincorporation of dUMP residues by DNA polymerase or due to deamination of cytosine.

Tissue specificity Isoform 1 is widely expressed with the highest expression in skeletal muscle, heart and testicles. Isoform 2 has the highest expression levels in tissues containing proliferating cells.

Involvement in disease	Defects in UNG are a cause of immunodeficiency with hyper-IgM type 5 syndrome (HIGM5) [MIM:608106]. Hyper-IgM syndrome is a condition characterized by normal or increased serum IgM concentrations associated with low or absent serum IgG, IgA, and IgE concentrations. HIGM5 is associated with profound impairment in immunoglobulin (Ig) class-switch recombination (CSR) at a DNA precleavage step.
Sequence similarities	Belongs to the uracil-DNA glycosylase family.
Post-translational modifications	Isoform 1 is processed by cleavage of a transit peptide.
Cellular localization	Mitochondrion and Nucleus.