Heat-labile UDG (1,000 U/mL)

Cat. No. : RK20543

Product components

Components	Component number	Size-1 100 U	Size-2 500 U
Heat-labile UDG (1,000 U/mL)	RM20530	100 μL	500 μL

Product Description

Heat-labile UGD is derived from *Psychrophilic marine* bacterium.The uracil-DNA Glycosylase (UDG) catalyzes the release of free uracil from uracil-containing DNA. UDG efficiently hydrolyzes uracil from single-stranded or double-stranded DNA ,but not from oligomers (6 or fewer bases). It was used to prevent the PCR carry-over contamination·The Heat-labile UDG is sensitive to temperature, and it's can be irreversibly inactivated above 50℃. It is suitable for PCR, qpcR, RT-PCR, and RT-qPCR systems.

Product Source

An *E.coli* strain that carries the UDG gene from *Psychrophilic marine* bacterium.

Unit Definition

One unit is defined as the amount of enzyme that catalyzes the release of 1 pmol of uracil per minute from uracil-containing DNA template in 60 min at 37℃.

Storage Temperature

-20℃

Storage Conditions

20 mM Tris-HCl, 100 mM KCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, 0.5% CA630, 0.5% Tween20, pH 7.5 @ 25℃

Heat Inactivation: 95℃, 2 min

Instructions

Treatment of 0.1 μg of uracil-containing DNA with 1 unit of UDG for 10 minutes at25℃ renders the DNA incapable of being copied by DNA polymerase. The Heat-labile UDG enzyme was incubated at 95℃ fo r2 minutes, which lead to the enzyme activities are lost.

Prepare PCR reaction system（50 μL）

component	amount
ddH_2O	To 50 μL
10X PCR Reaction Buffer, Mg^{2+} plus	5 μL
dUTP*	0.6 mM
dATP/dCTP/dGTP	0.2 mM each
Template DNA	optional
Primer1 (10 μM)	2 μL
Primer2 (10 μM)	2 μL
Taq DNA Polymerase (5,000 U/mL)	0.5 μL
Heat-labile UDG (1,000 U/mL) **	1 μL

***, note: the final concentration of dUTP can be adjusted between 0.2 - 0.6 mM.**

****, note: 0.1 - 1 U UDG enzyme used in a 50 μL reaction.**

Note: the final concentration of MgCl2 can be adjusted between 2 - 3 mM.

Reaction procedures

Temperatrue	time	Remarks
UDG reaction		
25℃	10 min	U-containing templates were degraded
95℃	2 min	UDG deactivation，template degeneration
PCR reaction		
94℃	30 s	
55℃	30 s	30 - 35 cycles
72℃	60 s/kb	
72℃	7 min	Complete extension

Note：PCR reaction procedure can be adjusted by the nature of Taq DNA polymerase and in accordance with the experimental needs.

Notes

UDG is active over a broad pH range with an optimum at pH 8.0, does not require divalent cation, and is inhibited by high ionic strength(> 200 mM).

QC Process

Purity is above 95% detected by SDS-PAGE.

No endonucleases, ss-DNase and other RNases contamination.

No residual host genomic DNA detected by PCR .