Heat-labile UDG

P051

Version 21.1

Product Description

Heat-labile UDG is cloned from *psychrophilic marine bacterium* and purified from *E. coli*. UDG can catalyze the hydrolysis of the N-glycosidic bond from deoxyuridine to release uracil in ssDNA and dsDNA. This product is sensitive to heat and the enzyme activity is irreversibly inactivated at temperature above 50℃. It is applicable for PCR, qPCR, RT-PCR and RT-qPCR.

Components

Components	P051-01 100 U	P051-02 500 U
Heat-labile UDG (1 U/μl)	100 μl	500 μl

Storage Buffer

20 mM Tris-HCl, pH 8.0@25℃
0.1 mM EDTA
100 mM KCl
1 mM DTT
50% Glycerol (v/v)
0.5% NP-40 (v/v)
0.5% Tween-20 (v/v)

Storage

Store at -30 ~ -15℃ and transport at ≤0℃.

Applications

Catalyze the hydrolysis of the N-glycosidic bond from deoxyuridine to release uracil in ssDNA and dsDNA. Remove aerosol contamination from dU-containing PCR products.

Unit Definition

One unit (U) is defined as the amount of enzyme that releases 1 nmol of uracils from dU-containing DNA within 1 h at 37℃ in the reaction system containing 70 mM of Tris-HCl, pH 7.5, 10 mM of NaCl, 1 mM of EDTA, 100 μg/ml of BSA.

Specific Activity of Enzyme

≥200,000 U/mg

Notes

UDG is applicable for most PCR or RT-PCR system. Please check if this product is applicable for your reaction system when using it for the first time.

Experiment Process

1.Recommended reaction mixture for PCR

ddH_2O	To 50 µl
10 × Taq Buffer (with 20 mM $MgCl_2$)	5 µl
dUTP[a]	0.6 mM
dATP/dCTP/dGTP	0.2 mM each
Template DNA	optional
Primer 1 (10 µM)	2 µl
Primer 2 (10 µM)	2 µl
Taq DNA Polymerase (5 U/µl)	0.5 µl
Heat-labile UDG (1 U/µl)[b]	1 µl

a. The final concentration of dUTP can be adjusted to 0.2 - 0.6 mM according to experiment needs.
b. The general amount of the Heat-labile UDG in the 50 µl reaction system is 0.1 - 1 U according to experiment needs.
▲ The final concentration of Mg^{2+} can be adjusted between 2 mM and 3 mM according to experiment needs.

2.PCR conditions

25℃	10 min	Degradation of dU-containing templates
95℃	2 min	UDG inactivation and template denaturation
PCR		
94℃	30 sec	30 - 35 cycles
55℃	30 sec	
72℃	60 sec/kb	
72℃	7 min	Final extension

▲ PCR program can be adjusted according to experiment needs.