HB220707

Hieff Canace™ Uracil+ High-Fidelity DNA polymerase

Product Information

Product Name	Cat#	Size
Hieff Canace™ Uracil+ High-Fidelity DNA polymerase	10145ES60	100 U
	10145ES76	500 U

Product Description

Hieff Canace™ Uracil+ High-Fidelity DNA polymerase, is a new generation of high-fidelity DNA Polymerase based on Pfu DNA Polymerase. The Hieff Canace™ Uracil+ high-fidelity DNA Polymerase enable rapid and accurate PCR reactions for complex templates. Its fidelity is improved significantly, and it completely avoids the amplification failure caused by using dUTP-containing primers/templates/dNTPs. The product is equipped with an optimized enzyme buffer and the addition of PCR enhancing components, making the enzyme highly efficient and adaptable to a wide range of templates, suitable for amplification of complex templates.

Product Components

Component number	Components	Cat#/Size	
		10145ES60	10145ES76
10145-A	Hieff Canace™ Uracil+ High-Fidelity DNA Polymerase (1 U/μL)	100 μL	500 μL
10145-B	2×Canace™ Uracil+ PCR buffer (containing Mg^{2+}, dNTPs)	1 mL×3	1 mL×15

Shipping and Storage

The components are shipped with ice packs and can be stored at -20°C for 1 years.

Product Application

High-fidelity library amplification using dUTP-containing primers/templates/dNTPs.

Cautions

1. For your safety and health, please wear lab coats and disposable gloves for operation.
2. For research use only!

Instructions

Hieff Canace™ Uracil+ High-Fidelity DNA polymerase is used in a slightly different way than conventional high-fidelity enzymes. Please read the instructions carefully before use.

1. Recommended reaction system

All operations should be carried out on ice. 2×Canace™ Uracil+ PCR buffer should be well mixed after thawing. Before the system configuration, please preheat the PCR instrument. After the addition of the components, mix the sample well by a pipette and spin it down to the bottom of the tube, then place it in the preheated PCR instrument for amplification. After use, return all components to -20 °C for storage.

Table 1 PCR amplification reaction

Components	Volume
Template or ligation product	X μL
2×Canace™ Uracil+ PCR buffer (containing Mg^{2+}, dNTPs)	25 μL
Forward primer (10-25 μM)	1-2.5 μL
Reverse primer (10-25 μM)	1-2.5 μL
Hieff Canace™ Uracil+ High-Fidelity DNA polymerase (1 U/μL)	1 μL
ddH_2O	Total to 50 μL

[Notes]:

1)Reagents: Sufficiently thaw each component before use;

2)Templates: The use of purified high-quality DNA templates can significantly improve the efficiency and success rate of amplification;

3)dNTPs: The recommended final dNTPs concentration is 200 μM. The dNTPs provided in the kit do not contain dUTP. If special circumstances require the preparation of dUTP-containing templates, additional dUTP can be added to a final concentration of 400 μM.

4)Polymerase concentration: 1 U/50 μL is recommended. It can be optimized between 0.5-2 U/50 μL, do not exceed 2 U/50 μL. In order to prevent polymerase from degrading primers due to 3 '→5' exonuclide activity, it is suggested to add polymerase to the reaction system in the last step.

5)Mg^{2+} final concentration: The final concentration of the system is 2 mM. Please ask our company to provide buffer with low Mg^{2+} concentration or without Mg^{2+} if you have special needs

2. Recommended reaction procedure

Table 2 PCR amplification reaction procedure

Step	Temperature	Duration	Number of cycles
Initial Denaturation	98°C	1 min	1
Denaturation	98°C	10 sec	
Annealing	60°C	30 sec	1~15
Extension	72°C	30 sec	
Final Extension	72°C	5 min	1
Hold	4°C	-	-

[Notes]:

1)Initial denaturation temperature and time: 98℃ is recommended. The recommended time is 30 sec for simple templates such as plasmid DNA, 1 min for libraries, 3 min for complex templates such as cDNA and genomic DNA, and 5-10 min for high GC content templates.

2)Annealing temperature and time: 60℃ is recommended, or temperature gradient can be set up to find the optimal temperature for primer annealing according to needs. The recommended annealing time is 20 sec and can be adjusted within 10-30 sec. Too long annealing time may lead to dispersion of the amplified products on the gel.

3)Extension temperature and time: 72℃ is recommended. The extension time is adjusted according to actual needs.