Hieff™ Taq DNA ligase (800 U/μL)

Product Information

Product name	Cat#	Size
Hieff™ Taq DNA ligase (800 U/μL)	14958ES03	1 mL
	14958ES08	5 mL
	14958ES50	50 mL

Product Description

Hieff™ Taq DNA Ligase is a mutant Taq DNA ligase with high ligation efficiency, and its performance in homologous recombination is significantly improved compared to wild type. While maintaining the basic function of the wild type. It is a thermostable ligase that catalyzes the formation of phosphodiester bonds between the 5´-phosphate and 3´-hydroxyl groups of two adjacent oligonucleotide strands that hybridize to the same complementary target DNA strand. This catalytic reaction occurs only when the two oligonucleotide strands are perfectly paired with the complementary target DNA, and there is no gap between the two oligonucleotide strands. Therefore, it can be used to detect single base substitution. Taq DNA ligase uses NAD^+ as a coenzyme factor and is active at 45°C-65°C.

Product Components

Component number	Components	Cat#/Size		
		14958ES03 (1 mL)	14958ES08 (5 mL)	14958ES50 (50 mL)
14958	Hieff™ Taq DNA ligase (800 U/μL)	1 mL	5 mL	50 mL

Source

Recombinant *E. coli*, containing the ligase gene cloned from *Thermus aquaticus* HB8.

Application

1. Allele-specific detection by ligase detection reaction and ligase chain reaction;
2. Incorporating phosphorylated oligonucleotides for mutagenesis by PCR amplification;
3. Homologous recombination.

Unit Definition

One unit(U) was defined as the amount of enzyme required to ligate 50% of 1 μg of BstEII-digested λ DNA fragments (12 bp cohesive ends) after 15 min incubation at 45°C, in a 50 μL reaction system.

Shipping and Storage

The product is shipped with ice packs and can be stored at -20°C for one year. Please avoid repeated freeze-thaw. For long-term storage (more than 30 days), the buffer should be stored at -80°C.

Quality Control

Detection of nickase residues: 400 U of this product and 0.5 μg of IL23R plasmid were incubated at 37°C for 4 h, and the electrophoretic bands of DNA did not change.

Detection of exonuclease residues: 400 U of this product and 0.5 μg of λDNA-Hind III were incubated at 37°C for 4 h, and the electrophoretic bands of DNA did not change.

Detection of RNase residues：40 U of this product and 0.5 μg of 293T RNA were incubated at 37°C for 1 h, and the electrophoretic bands of RNA did not change.

Cautions

1. 10×Taq DNA Ligase Buffer contains coenzyme factor NAD^+, in order to prolong the half-life of NAD^+, the Buffer should be stored at -80°C.
2. Taq DNA Ligase cannot replace T4 DNA ligase.
3. For your safety and health, please wear lab coats and disposable gloves for operation.
4. This product is for research use ONLY !

Instructions

1. Prepare the following reaction components:

Components	Volume
DNA	up to 1 μg
10×Taq DNA Ligase Reaction Buffer (Cat#15823)	5 μL
Taq DNA Ligase (800 U/μL)	80 U
ddH_2O	up to 50 μL

2. Reaction conditions: Incubate at 45°C for 15 min. Stop the reaction by adding stop dye (50% glycerol, 50 mM EDTA and bromophenol blue).