Taq DNA Ligase

Catalog: RK20502
Size: 2,000 U / 10,000 U
Concentration: 40,000 U/ml
Components:

Taq DNA Ligase (40,000 U/ml)	RM20506
10X *Taq* DNA Ligase Reaction Buffer	RM20131

Product Description

Taq DNA Ligase is a thermostable ligase that catalyzes the formation of a phosphodiester bond between the 5´-phosphate and the 3´-hydroxyl of two adjacent DNA strands. The target strands need to be hybridized and accurately paired, with no gap, to a complementary DNA strand; allowing resolution of single nucleotide variants. *Taq* DNA Ligase uses NAD as a cofactor and it is active at elevated temperatures (37°C–75°C).

It is applicable to Allele-specific gene detection using Ligase Detection Reaction and Ligase Chain Reaction, as well as Mutagenesis by incorporation of a phosphorylated oligonucleotide during primer extension amplification.

Product Source:

Purified from an *E.coli* strain containing the cloned ligase gene from *Thermus thermophilus* HB

Unit Definition: (Cohesive End Unit)

One unit is defined as the amount of enzyme required to give 50% ligation of the 12-base pair cohesive ends of 1 µg of BstEII-digested λ DNA in a total reaction volume of 50 µl in 15 minutes at 45°C.

1X *Taq* DNA Ligase Reaction Buffer:

20 mM Tris-HCl, 25 mM Potassium Acetate, 10 mM Magnesium Acetate, 1 mM NAD, 10 mM DTT, 0.1% Triton X-100, pH 7.6@25°C

Storage Temperature: -80°C

Storage Conditions:

10 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, pH 7.4 @ 25°C

Heat Inactivation: No

Instructions

1. Reaction set-up:

H_2O	up to 50 µl
10X *Taq* DNA Ligase Reaction Buffer	5 µl
DNA	up to 1 µg
Taq DNA Ligase	2 µl (80 units)

2. Incubate at 45°C for 15 minutes.

Notes:

1. After thawing 10X *Taq* DNA Ligase Reaction Buffer (RM20131) from low temperature to room temperature, white precipitates may appear in the solution, which can be dissolved by blowing 20-30 times with a pipiter or by vortexing.。
2. Reaction Conditions: Incubate DNA and enzyme in 1X *Taq* DNA Ligase Buffer at 45°C for 15 minutes or in a thermocycler with a program suited to the reaction described by *[Barany (1991) Genetic Disease Detection and DNA Amplification Using Cloned Thermostable Ligase. Proc. Natl. Acad. Sci. USA 88, 189-193.]* The reaction is stopped with a mixture of 50% glycerol, 50 mM EDTA, bromphenol blue.
3. 1X *Taq* DNA Ligase Reaction Buffer requires NAD^+ as a cofactor. NAD^+ is supplied in the 10X *Taq* DNA Ligase Reaction Buffer; the buffer should be stored at -80°C to extend the half-life of the NAD^+ cofactor.

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.