Taq DNA Ligase (40 U/μL)

Product Description

Taq DNA Ligase is a thermostable ligase that catalyzes the formation of a phosphodiester bond between the 5'-phosphate and 3'-hydroxyl groups of two adjacent oligonucleotides hybridized to the same complementary target DNA strand. This catalytic reaction occurs only when the two oligonucleotides are perfectly paired with the complementary target DNA and there is no gap between the two oligonucleotides. Therefore, it can be used to detect single-base substitutions. Taq DNA Ligase uses NAD+ as a cofactor and is active in the temperature range of 45°C to 65°C.

Specifications

Cat.No.	11051ES80/11051ES84/11051ES92
Size	1,000 U/2,000 U/10,000 U
Concentration	40 U/μL
Source	Recombinant *E. coli* strain containing the ligase gene cloned from *Thermus aquaticus HB8*.
Unit Definition	One unit of activity is defined as the amount of enzyme required to ligate 50% of 1 μg of λDNA fragments digested with BstEII (12 bp sticky ends) within 15 minutes at 45°C in a 50 μL reaction volume
Inactivation conditions	Incubate at 45°C for 15 minutes. Add stop dye (50% glycerol, 50 mM EDTA, and bromophenol blue) to terminate the reaction

Components

Components No.	Name	11051ES80	11051ES84	11051ES92
11051-A	Taq DNA Ligase (40 U/μL)	25 μL	50 μL	5×50 μL
11051-B	10×Taq DNA Ligase Buffer (NAD^+)	250 μL	500 μL	5×500 μL

Storage

This product should be stored at-25~-15°C for 1 year.

Product Application

1. Specific detection of alleles using ligase detection reaction and ligase chain reaction
2. Mutagenesis by PCR amplification incorporating phosphorylated oligonucleotides
3. Homologous recombination.

Instruction

1) Reaction system

Components	Volume(μL)
DNA	up to 1 μg
10×Taq DNA Ligase Buffer	5 μL
Taq DNA Ligase (40 U/μL)	2 μL
ddH_2O	up to 50 μL

2) Reaction conditions: Incubate at 45°C for 15 minutes. Add stop dye (50% glycerol, 50 mM EDTA, and bromophenol blue) to terminate the reaction

Notes

1. The 10× Taq DNA Ligase Buffer contains the cofactor NAD^+. To extend the half-life of NAD+, the buffer should be stored at -80°C.
2. Taq DNA Ligase cannot replace T4 DNA Ligase.
3. This product is for research use only.
4. Please wear the necessary PPE, such lab coat and gloves, to ensure your health and safety.