# Product Manual

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|---|---|
| **Product Name** | Taq DNA Ligase |
| **Source** | Recombinant expression in Escherichia coli |
| **Catalog Number** | CSB-DEM048 |
| **Physical Form** | Liquid |
| **Storage Conditions** | Long-term storage of Taq DNA Ligase: -20°C<br>Short-term storage of 10× Taq DNA Ligase Buffer: -20°C<br>Long-term storage of 10× Taq DNA Ligase Buffer: -80°C |
| **Quality Control** | No detectable nuclease and endonuclease activities |
| **Shelf Life** | 12 months |

## Product Description

Taq DNA Ligase is a heat-resistant joining enzyme that catalyzes the formation of phosphodiester bonds between the 5′-phosphate and 3′-hydroxyl of two adjacent oligonucleotide chains that hybridize with the same complementary target DNA chain. This catalytic reaction only occurs when the two oligonucleotide chains are completely paired with the complementary target DNA and there are no gaps between the two oligonucleotide chains. Therefore, it can be used to detect single base substitutions. Taq DNA Ligase requires NAD+ as a cofactor and exhibits activity within the temperature range of 37-75°C.

## Product components

| Component No. | Component Name | Specifications | | |
|---|---|---|---|---|
| 1 | Taq DNA ligase (40U/μL) | 2KU | 4KU | 20KU |
| 2 | 10×Taq DNA Ligase Buffer | 500μL | 1mL | 1.25mL*4 |

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**Operating instructions**

1. **Prepare the following reaction system in a sterile microcentrifuge tube**

| Composition | Usage |
|---|---|
| ddH2O | Up to 50 μL |
| 10×Taq DNA Ligase Buffer | 5 μL |
| Taq DNA ligase (40U/μL) | 2 μL |
| DNA | Up to 1μg |

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

**Precautions:**

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 substitute T4 DNA ligase.