艾科瑞生物
Accurate Biology

Instruction for Use

T4 DNA Ligase

AG11810
Version.V1E1

Research Use Only
Not For Diagnosis Procedures

1. Description

This product is a recombinant protein obtained by cloning the T4 DNA ligase gene into a plasmid and expressing it in Escherichia coli. In the presence of the cofactors Mg^{2+} and ATP, this product catalyzes the formation of phosphodiester bonds between the 5′-phosphate and 3′-hydroxyl ends of adjacent DNA strands. Additionally, it can catalyze the ligation of both blunt-ended and cohesive-ended DNA fragments.

2. Kit Information

Kit Name	Cat. No	Specification
T4 DNA Ligase	AG11810	25000 U (350 U/ μl)

3. Transportation and Storage

Storage	Store at −20°C
Transportation	Transport at −20°C Dry Ice or Blue Ice Condition

4. Kit Components

Kit Components	Volume
T4 DNA Ligase (350 U/μl)	72 μl
10X T4 DNA Ligase Buffer	1 ml

In a 20 μl ligation reaction system, the amount of enzyme required to ligate over 90% of 6 μg of λ-Hind III digest after 30 minutes at 16°C is defined as one unit (U) of enzyme activity.

5. Precautions

1) Before using T4 DNA Ligase, briefly centrifuge to collect all the solution at the bottom of the tube to minimize loss. Mix gently with a pipette (avoid creating bubbles).
2) Before using 10X T4 DNA Ligase Buffer, thaw it thoroughly on ice, mix gently, and briefly centrifuge before use.
3) Ligation reaction conditions:
   For sticky-end ligation, incubate at 16°C for 0.5 to 5 hours.
   For blunt-end ligation, incubate at 16°C for 1 to 24 hours.
   If ligation efficiency is low, extend the reaction time as needed. For long reactions (over 16 hours), incubation at 4°C is recommended.
4) After the ligation reaction, the product can be used directly for transformation or stored at -20°C.

6. Application

Efficient T/A cloning ligation; dsDNA nick sealing and repair; Adaptor ligation for high-yield DNA libraries.

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