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**Catalog No. BAM-02-050-EX**

# T4 DNA Ligase

## BACKGROUND

**Bacteriophage T4 derived DNA ligase** catalyzes the formation of phosphodiester bonds between 3'-OH termini and 5'-P termini in duplex DNA or RNA (1). This enzyme will join blunt end and cohesive end termini as well as repair single stranded nicks in duplex DNA, RNA or DNA/RNA hybrids。

**T4 DNA ligase** was expressed in E.coli in large quantities and highly purified. MW is 55.3 kDa.

**Applications:** 1) Insertion of DNA fragment into a vector
2) Linker (or Adaptor) ligation with DNA fragment

**Size:** 20,000 U (400U/ul)

**Concentration:** 400 U/ul, where one unit is the amount of enzyme that ligates more than 90% of 6 ug of λDNA-HindIII fragments in a 20μl mixture in 30 minutes at 16°C.

**Form:** 10mM Tris-HCl (pH 7.6), 50mM KCl, 0.1mM EDTA, 1mM dithiothreitol, 50% glycerol

**Quality Assurance:** Greater than 95% protein determined by SDS-PAGE (CBB staining)
The absence of endonucleases and exonucleases was confirmed.

**Reagents Supplied with Enzyme:** 10 x T4 Ligase Reaction Buffer (T4-Lig): 500mM Tris-HCl (pH 7.6), 100mM $MgCl_2$, 10 mM ATP, 100mM dithiothreitol

**Data Link:** UniProtKB/Swiss-Prot P00970 (DNLI_BPT4)

**Storage:** Store at -20°C

**References:**

1) 1. Weiss B *et al* (1968) "Enzymatic breakage and joining of deoxyribonucleic acid." *J. Biol. Chem.* **243**: 4543-4555 PMID: 4879167

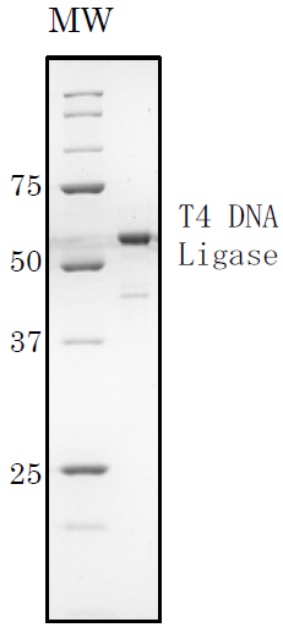


Fig. 1 SDS-PAGE of T4 DNA ligase protein

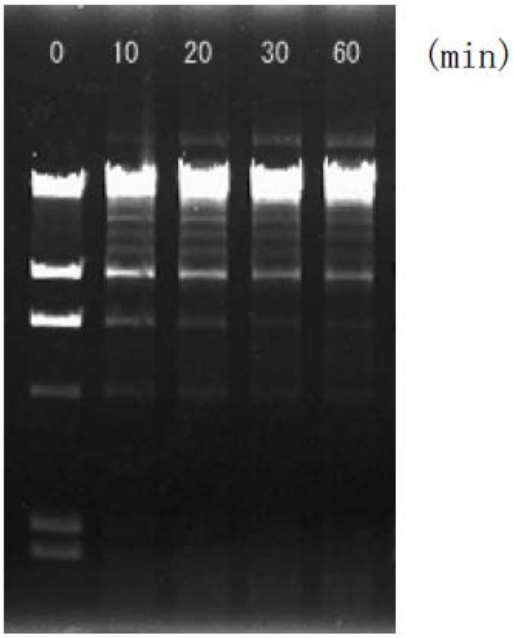


Fig.2 DNA ligation activity
Ligation of Hind III fragments of λDNA using 1 unit of T4 DNA ligase
Incubation at 16°C for 0, 10, 20, 30, and 60 min.

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COSMO BIO CO., LTD.
Inspiration for Life Science
TOYO 2CHOME, KOTO-KU, TOKYO, 135-0016, JAPAN
http://www.cosmobio.co.jp/index_e.asp E-mail: export@cosmobio.co.jp
Phone : +81-3-5632-9617 FAX : +81-3-5632-9618