T4 DNA Ligase

02-050　20,000 U (400U/μl) ,　02-050-5　5 X 20,000 U　(400U/μl)

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

Storage conditions:

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

Store at -20℃

Concentration:

400 U/μl, where one unit is the amount of enzyme that ligates more than 90% of 6 μg of λDNA-HindIII fragments in a 20μl mixture in 30 minutes at 16℃.

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　(02-T4b　1.25ml)

Data Link: Swiss-Prot P00970

References:

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

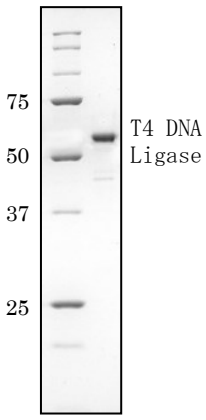

Fig.1 SDS-PAGE of T4 DNA ligase protein

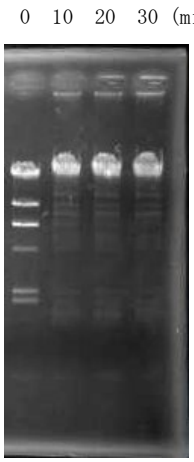

Fig.2 DNA ligation activity
Ligation of Hind III fragments of λ DNA using 400 unit of T4 DNA ligase Incubation at 16℃ for 0, 10, 20, 30, min.