



## T4 DNA Ligase

References: ME-0040-10

Products and procedures described in this protocol are intended for research purposes only. **Batch details**  
Units per vial: ME-0040-10 20000 units

Concentration : 500 U/ $\mu$ l

### Source

*Escherichia coli* lysogen for T4-lig phage.

### Description

T4 Dna ligase catalyses the formation of phosphodiester bonds between neighboring 3' hydroxyl and 5'-phosphate termini in DNA.

### Package contents

Reagent	Description
T4 DNA ligase	ME-0040-10 20000 units
Dilution buffer	50 mM KCL, 10 mM Tris-HCl (pH 7.5), 0.1 mM EDTA, 10 $\beta$ -mercaptoethanol, 50% Glycerol (0.5 ml).
10x Ligation buffer	500mM Tris-HCl (pH7,9), 100mM MgCl <sub>2</sub> , 200mM DTT, 10mM ATP. (1ml)

### Shipping conditions

Shipping ay -20°C.

### Storage conditions

Storage at -20°C is recommended.

### Unit definition

One unit is defined as the amount of enzyme required to give >95% ligation of 6 $\mu$ g of <sup>32</sup>P-Hind III fragments in one hour at 16°C in 20  $\mu$ l of reaction mixture.  
One EGT unit equals 0.015 Weiss (ATP-PP exchange) units. Equivalently, one Weiss unit equals 67 EGT units.

### Reaction Conditions

50mM Tris-HCl (pH7,9), 10mM Mg Cl<sub>2</sub>., 20mM DTT, 1,0mM ATP, 16°C.

### Quality control :

#### Endonuclease Activity Assay

Incubation of 1000 units with 1 $\mu$ g of <sup>32</sup>P-Hind III fragments using the assay condition in the absence of ATP for 16 hours gave a normal and sharp banding pattern.

#### Nicking Acitivity Assay

Incubation of 1000 units with 1  $\mu$ g of plasmid pBR322 DNA at 16°C or 37°C for 16 hours gave no change of banding pattern on agarose gel electrophoresis analysis.

#### Phosphatase Assay

Incubation of 10000 units with p-nitrophenyl phosphate using the assay condition for 24 hours released no p-nitrophenol (A410).

### Related products

Reagent	Pack. size	Reference
StabyCloning Kit, chemically-competent cells	10 Rxns	GE-STC1-12
StabyExpress kit, chemically-competent cells	10 Rxns	GE-SET7-1212
Chemically-competent bacteria	96x50 $\mu$ l	GE-DG1C-96
Electro-competent bacteria	96x50 $\mu$ l	GE-DG1E-96

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