

T4 DNA Ligase

Catalog #	Pack size	Price(€)
ZT00201	20000U	9.60
ZT00202	100000U	43.20

Description:

T4 DNA Ligase is a recombinant enzyme formulated and tested for high activity in blunt- and cohesive-end ligations for cloning and linker addition. The enzyme covalently joins 5'-phosphate and 3'-hydroxyl termini in duplex DNA or RNA. It is free of detectable exo- or endonuclease activities.

Source:

Purified from recombinant *E. coli* strain.

Applications:

Cloning of restriction fragments.
Joining linkers and adapters to blunt-ended DNA.

Unit Definition:

One unit is defined as the amount of enzyme required to give 50% ligation of Hind III fragments of lambda DNA (5' DNA termini concentration of 0.12 μ M, 300 μ g/ml) in a total reaction volume of 20 μ l in 30 minutes at 16°C in 1X T4 DNA Ligase Reaction Buffer.

Concentration:

400U/ μ l

Quality Control Tests:

Activity, SDS-PAGE (purity), DNase, endonuclease/nickase, RNase.

Storage:

T4 DNA ligase in 10 mM Tris-HCl, 50mM KCl, 1mM dithiothreitol, 0.1mM EDTA, 0.2mg/ml BSA, 50% glycerol, pH 7.4 (25°C) should be stored at -20°C.

Heat Inactivation:

65°C for 10 minutes

1X T4 DNA Ligase Reaction Buffer:

50mM Tris-HCl, 10mM MgCl₂, 1mM ATP, 10mM dithiothreitol, 25µg/ml BSA, pH 7.5 (25°C)

Reaction Conditions:

1X T4 DNA Ligase Reaction Buffer, incubate at 16°C.

For convenience, ligations may be done at room temperature (20-25°C). For cohesive (sticky) ends, use 1µl of T4 DNA Ligase in a 20µl reaction for 10 minutes. For blunt ends, use 1µl of T4 DNA Ligase in a 20µl reaction for 2 hours.

References:

Engler, M.J. et al. (1982) P.D. Boyer (Eds.), *The Enzymes*, 5, pp. 3. San Diego: Academic Press.

Remaut, E. et al. (1983) *Gene*, 22, 103-113.

Sambrook, J. et al. (1989) *Molecular Cloning: A Laboratory Manual*, (2nd Ed.), 1.53-1.73.

Weiss, B. et al. (1968) *J. Biol. Chem.*, 243, 4543-4555.



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