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Product Information

Version 4.2, Revision 2011-07-25

Product Name	**T4 DNA LIGASE**
Supplied with	10X T4 DNA Ligase Buffer
Code.	A1113
Concentration	3 Weiss units/µl or 5 Weiss units/µl
Enzyme Description	T4 DNA Ligase catalyzes the formation of a 3'-5' phosphodiester bonds between 5'-P termini and 3'-OH termini in duplex DNA or RNA. Its MW is about 62,000, and its optimal reaction pH is 7.6. It requires Mg2+ and ATP as cofactors. This enzyme can ligate both cohesive end pair and blunt end pair.
Source	Purified from recombinant E. Coli strain that carries the cloned DNA ligase gene from bacteriophage T4.
Storage Buffer	10mM Tris-HCl (pH 7.5), 50mM NaCl, 0.1mM EDTA, 10mM 2-mercaptoethanol, 50% glycerol.
10X Reaction Buffer	500mM Tri-HCl (pH 7.8 at 25°C), 100mM DTT, 100mM $MgCl_2$, 10mM ATP and 250µg/ml BSA
Unit Definition	One unit (Weiss 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 µM [300µg/ml] in 20 µl of 1 x T4 DNA Ligase Reaction Buffer in 30 minutes at 16 °C. ATP is an essential cofactor for the reaction.
Quality Control Assay	Incubation of 200 units of enzyme with 1µg ^3H DNA to test exonuclease activity and endonuclease activity. No exonuclease activity was found after 4 hr incubation at 37 °C and no endonuclease activity was found after 15 hr incubation.
Applications	Insertion of DNA fragment into a vector Linker/Adaptor ligation with DNA fragment.
Cohesive-end Ligation	For each reaction, use 2.5 units of enzyme in 10µl of 1X reaction buffer with cohesive-ended DNA. Incubate at 16°C for 4-6 hrs.
Blunt-end Ligation	For each reaction, use 10 units of enzyme in 10µl of 1X reaction buffer with blunt-ended DNA, incubate at 16 °C overnight. About 95% ligation of blunt ended DNA fragments will be achieved after this incubation. Blunt-end ligation recommended if the ligated DNA will be finally used for packaging with lambda phage extract.
Store at	-20 °C

This material is for laboratory research purpose and/or in vitro use only and is not to be used in humans.