

T4 DNA Ligase Active Protein | T4 DNA active protein

Recombinant T4 DNA Ligase

CATALOG #
AAA38256

HOST
Escherichia Colilambda lysogen NM 989

PRODUCT SYNONYMS

T4 DNA Ligase; Recombinant T4 DNA Ligase; T4 DNA; T4 DNA Ligase Recombinant; DNA ligase 4; EC 6.5.1.1; DNA ligase IV; Polydeoxyribonucleotide synthase [ATP] 4; T4 DNA active protein

PRODUCT SPECIFICATIONS

Host	Escherichia Colilambda lysogen NM 989
Form/Format	(167,000 U/ml) 50mM Tris-HCl (pH 7.8 at 25°C), 10mM MgCl ₂ , 10mM DTT, 1mM ATP, 25 ug/ml BSA and DNA (0.1 to 1 um in 5' termini). Optimal ligation occurs at 16°C.
Physical Appearance	Sterile filtered liquid formulation
Storage Buffer	50mM KCl, 10mM Tris-HCl (pH 7.4), 0.1 mM EDTA, 1mM DTT, 200 ug/ml BSA and 50% glycerol. Store at -20°C.
Unit Definition	1. One unit is defined as the amount of enzyme required to give 50% ligation of Hind III fragments of DNA (5' DNA termini concentration of 0.12 uM, 300- µg/ml) in a total reaction volume of 20 ul in 30 minutes at 16°C in 1X T4 DNA Ligase Reaction Buffer. 2. One Weiss unit is defined as the amount of enzyme required to catalyze the exchange of 1 nmol of 32P from pyrophosphate to ATP, into Norit-adsorbable material in 20 minutes at 37°C.
Biological Activity	One Weiss unit is equivalent to circa 67 cohesive-end ligation units. - T4 DNA Ligase is strongly inhibited by NaCl or KCl if the concentration is > 200mM. - Ligation of blunt-ended and single-base pair overhang fragments requires about 50 times as much enzyme to achieve the same extent of ligation as cohesive-end DNA fragments. Blunt-end ligation may be enhanced by addition of PEG 4000 (10% w/v final concentration) or hexamine chloride, or by reducing the ATP concentration to 50uM. - To dilute T4 DNA Ligase that will subsequently be stored at -20°C, 50% glycerol storage buffer should be used; to dilute for immediate use, 1x T4 DNA Ligase reaction buffer can be used.
Heat Inactivation	T4 DNA Ligase can be inactivated by incubation at 65°C for 10 minutes.

Quality Control	Purified free of contaminating endonucleases and exonucleases. Each lot of T4 DNA ligase is also tested in a mock cloning assay, which reveals any damage to the ligated DNA termini. Greater than 99.9% of the termini remain undamaged in this assay. Exonuclease Activity: Incubation of a 50µl reaction containing 13,000 units of T4 DNA Ligase with 1µg of a mixture of single and double-stranded [3H] E. coli DNA (200,000 cpm/ug) for 4 hours at 37°C released < 0.3% of the total radioactivity. Endonuclease Activity: Incubation of a 50µl reaction containing 13,000 units of T4 DNA Ligase with 1µg of X174 RF I DNA for 4 hours at 37°C resulted in < 5% conversion to RFII as determined by agarose gel electrophoresis. Nuclease Activity : Incubation of 13,000 units for 18 hours in assay buffer (without ATP) with Hind III fragments of gamma DNA yielded a clear and sharp banding pattern on agarose gels.
Preparation and Storage	Two years when stored at -20°C, 2 weeks at 4°C.

ADDITIONAL INFORMATION

Related Product Information for T4 DNA active protein	Description: T4 DNA Ligase catalyzes the formation of a phosphodiester bond between juxtaposed 5' -phosphate and 3' -hydroxyl termini in duplex DNA or RNA. 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.
Product Categories/Family for T4 DNA active protein	Enzymes; Ligase

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

AAA Biotech | Tel: +1 (619) 604-9440 | Fax: +1 (619) 604-9441 | contact@aaabiotech.com

Online datasheet: <https://stage.aaabiotech.com/escherichia-colilambda-lysogen-nm-989-active-protein/t4-dna-ligase/38256>