WATCHMAKER GENOMICS

T4 DNA LIGASE KITS

PRECISION ENZYMES TO FUEL CUTTING-EDGE APPLICATIONS

T4 DNA Ligase catalyzes the formation of a phosphodiester bond between the terminal 5' phosphate and a 3' hydroxyl group of duplex DNA, RNA, or DNA/RNA hybrids. This enzyme joins blunt and cohesive (sticky) ends, and repairs single-stranded nicks in duplex DNA, RNA, or DNA/RNA hybrids.[1,2]

HIGHLIGHTS

- Highly stringent enzyme manufacturing ensures quality performance across scales and lots
- Supplied with standard or rapid ligation buffers for simple optimization
- Broad utility across a range of DNA and RNA inputs and a variety of applications

SPECIFICATIONS

- Concentrations available: 120 and 600 U/µL
- Purity (SDS-PAGE): >99%
- dsDNA exonuclease: <1% released*
- ssDNA exonuclease: <1% released*
- DNA contamination (*E. coli*, mammalian, library): <10 copies*
- Phosphatase assay: <1% release*
- Endonuclease: Not detectable

ADVANTAGES OF PARTNERING WITH WATCHMAKER

- Expedited custom labeling and kitting formats, from bulk to finished goods
- Application-relevant, kit-based lot testing
- ISO13485-compliant Quality Management System
- Flexible terms designed with both start-up and large organizational needs in mind

APPLICATIONS

- Cloning of restriction digestion and PCR products
- Attachment of linkers or adapters to DNA
- Site-directed mutagenesis
- Amplified fragment length polymorphism (AFLP)
- Ligase-mediated RNA detection[3]
- Nick repair
- DNA self-circularization

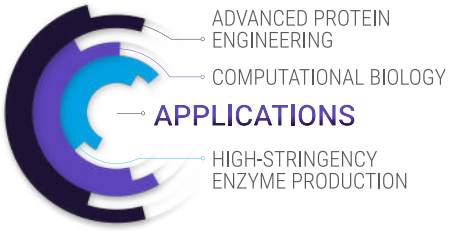
*As assessed using 6,000 U per assay

For research use only. Not for use in diagnostic procedures.

READ. WRITE. EDIT.

OUR TECHNOLOGY: THE NEW FRONTIER OF PROTEIN ENGINEERING

Industry-leading assays require best-in-class reagents. Watchmaker's focus on application-driven development and deep domain expertise in advanced enzyme engineering, computational biology, and high-stringency protein production enables us to address unmet needs with respect to performance, scalability, and consistency of supply. Our purpose-designed enzymes deliver outstanding performance from prototype to large volume production.



REFERENCES

1. Rossi, R., et al., Functional characterization of the T4 DNA Ligase: a new insight into the mechanism of action, *Nucleic Acids Res*., **25**, 2106 – 2113, 1997.

2. Cherepanov, A.V., et al., Binding of nucleotides by T4 DNA Ligase and T4 RNA Ligase: optical absorbance and fluorescence studies, *Biophys. J*., **81**, 3545 – 3559, 2001.

3. Nilsson, M., et al., RNA-templated DNA ligation for transcript analysis, *Nucleic Acids Res*., **29**, 578 – 581, 2001.

PRODUCT	60 KU
T4 DNA Ligase (120 U/µL)†	7K0042-500UL
T4 DNA Ligase (120 U/µL) with 10X Buffer *incl. 10X Ligation Buffer*	7K0039-500UL
T4 DNA Ligase (120 U/µL) with 5X Rapid Buffer *incl. 5X Rapid Ligation Buffer (30% PEG)*	7K0040-500UL
T4 DNA Ligase (120 U/µL) with 2X Rapid Buffer *incl. 2X Rapid Ligation Buffer (15% PEG)*	7K0041-500UL

PRODUCT	300 KU	3,000 KU
T4 DNA Ligase (600 U/µL)†	7K0027-500UL	7K0027-5ML
T4 DNA Ligase (600 U/µL) with 10X Buffer *incl. 10X Ligation Buffer*	7K0026-500UL	7K0026-5ML
T4 DNA Ligase (600 U/µL) with 5X Rapid Buffer *incl. 5X Rapid Ligation Buffer (30% PEG)*	7K0004-500UL	7K0004-5ML
T4 DNA Ligase (600 U/µL) with 2X Rapid Buffer *incl. 2X Rapid Ligation Buffer (15% PEG)*	7K0025-500UL	7K0025-5ML

†A unit is defined as the amount of DNA ligase required to join 50% of 100 ng of DNA fragments with cohesive termini in 20 µL 1X DNA Ligase Buffer (final concentration 50 mM Tris-HCl, 10 mM $MgCl_2$, 5 mM DTT, 1 mM ATP pH 7.6 @ 25°C) following a 30 minute incubation at 23°C.

FOR ADDITIONAL CONCENTRATIONS AND CUSTOM PACK SIZES, CONTACT

SALES@WATCHMAKERGENOMICS.COM

Precision tools for life science.

WATCHMAKER GENOMICS