

T4 RNA Ligase

Instruction for Use

Cat. No./Spec.: E1015-A/1,000 U

Concentration: 10 U/μL

Product Description

T4 RNA Ligase catalyzes the ATP-dependent formation of phosphodiester bonds between 5'-phosphate groups and 3'-hydroxyl termini of oligonucleotides, single-stranded RNA, and DNA molecules both intermolecularly and intramolecularly.

Minimum substrates: a nucleotide 3',5'-phosphate in intermolecular reactions and an 8-nucleotide oligonucleotide in intramolecular reactions.

Components

Component	E1015-A
T4 RNA Ligase (10 U/μL)	100 μL
10X T4 RNA Ligase Buffer	200 μL
BSA (1mg/mL)	200 μL

Storage Condition & Shelf Life

Store at -20°C.

Source

Recombinant *E. coli* strain contains the gene 63 cloned from bacteriophage T4.

Unit Definition

A unit is defined as the amount of enzyme required to catalyze the conversion of 1 nmol of 5'-[³²P]-*(A)*₁₂₋₁₈ to its acid-resistant form at 37° C within 30 minutes.

Enzyme activity is determined in the following mixture: 50 mM Tris-HCl (pH 7.5), 10 mM MgCl₂, 10 mM DTT, 1 mM ATP, and 10 μM 5'-[³²P]-*(A)*₁₂₋₁₈ (10 μM at the 5'-terminus).

Scope of Application

- RNA 3'-terminal labeling (using cytidine 3',5'-di[α-³²P] phosphate)
- RNA-to-RNA ligation
- Synthesis of oligoribonucleotides and oligodeoxyribonucleotides
- Specific modification of tRNA
- Ligation of oligodeoxynucleotides to single-stranded cDNA for 5' RACE (Rapid Amplification of cDNA Ends)
- Site-specific generation of PCR primer complexes

Inhibition and Inactivation

- Inhibitors: metal chelating agents, SH group modifying reagents.
- Heat at 70°C for 10 minutes.

This product is for research use only.