

Product Components

| Components | Component | Size-1 | Size -2 |
|-----------------------------------|-----------|---------|---------|
| | Number | 150 U | 750 U |
| T4 RNA Ligase 2 (10,000 U/mL) | RM21520 | 15 µL | 75 µL |
| 10X T4 RNA Ligase Reaction Buffer | RM20146 | 1.25 mL | 1.25 mL |
| ATP (10 mM) | RM20159 | 300 µL | 1.5 mL |

Product Description

T4 RNA Ligase 2, is an ATP-dependent double-stranded RNA ligase (dsRNA ligase), also known as T4 Rnl2 (gp24.1), which can be used for intramolecular circularization and intermolecular linear ligation of double-stranded RNA. Unlike T4 RNA Ligase 1, T4 RNA Ligase 2 exhibits significantly higher activity in connecting gaps (nicks) in double-stranded RNA compared to connecting ends of single-stranded RNA. T4 RNA Ligase 2 is also applicable for intra- or inter-molecular ligation of the 3' hydroxyl of RNA chains and the 5' phosphate of DNA chains within double-stranded nucleic acids (such as RNA double strands, RNA/DNA hybrids, and/or DNA double strands). The enzyme requires an adjacent 5' phosphate and 3' OH for ligation. The enzyme can also ligate the 3' OH of RNA to the 5' phosphate of DNA in a double stranded structure.

Product Source

An *E. coli* strain that carries a plasmid encoding the engineered *T4 Rnl2* gene.

Unit Definition

1 units (U) refer to the enzyme quantity required in a total reaction volume of 20 µl, under conditions of 37°C, to ligate equimolar mixtures of 0.4 µg of 23-mer and 17-mer RNA within 30 minutes.

Storage Buffer

10 mM Tris-HCl, 50 mM KCl, 35 mM (NH₄)₂SO₄, 0.1 mM DTT, 0.1 mM EDTA, 50% Glycerol, pH 7.5 @ 25°C.

Storage Temperature

-20°C.

Reaction Conditions

1X T4 RNA Ligase Reaction Buffer with 0.4 mM ATP, Incubate at 25°C.

1X T4 RNA Ligase Reaction Buffer

50 mM Tris-HCl, 10 mM MgCl₂, 1 mM DTT, pH 7.5 @ 25°C.

Heat Inactivation

85°C for 5 minutes.