

## Product Components

Components	Component	Size-1	Size -2
	Number	2,000 U	10,000 U
T4 RNA Ligase 2, truncated KQ (200,000 U/mL)	RM21508	10 µL	50 µL
10X T4 RNA Ligase Reaction Buffer	RM20146	500 µL	500 µL
50% PEG 8000	RM20133	500 µL	1.25 mL

## Product Description

T4 RNA Ligase 2, truncated KQ (T4 Rnl2tr R55K, K227Q), specifically catalyzes the ligation of a 5'-adenylated DNA or RNA to the 3' OH end of an RNA molecule. This enzyme-mediated ligation does not require ATP but necessitates a pre-adenylated adapter. T4 RNA Ligase 2, truncated KQ, a double-point mutant of T4 RNA Ligase 2 with R55K and K227Q substitutions, significantly reduces the non-specific ligation of RNA (such as concatenation or self-circularization) compared to T4 RNA Ligase 2, truncated, while maintaining enzyme activity similar to that of T4 RNA Ligase 2, truncated.

## Product Source

An *E. coli* strain that carries a plasmid encoding the engineered T4 Rnl2tr R55K, K227Q gene. This plasmid harbors a sequence encoding the 1-249 amino acids of T4 RNA Ligase 2, with mutations introduced at positions 55 and 227, where arginine is substituted with lysine and lysine is substituted with glutamine, respectively.

## Unit Definition

200 units (U) refer to the enzyme quantity required in a total reaction volume of 20 µl, under conditions of 25°C, to attach 80% of 31-mer RNA to the pre-adenylated 17-mer DNA end within 1 hour.

## Storage Buffer

10 mM Tris-HCl, 100 mM NaCl, 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, Incubate at 25°C.

## 1X T4 RNA Ligase Reaction Buffer

50 mM Tris-HCl, 10 mM MgCl<sub>2</sub>, 1 mM DTT, pH 7.5 @ 25°C.

## Heat Inactivation

65°C for 20 minutes.