T4 RNA Ligase 2, truncated

Catalog: RK20505
Size: 2,000 U / 10,000 U
Concentration: 200,000 U/ml
Components:

T4 RNA Ligase 2, truncated (200,000 U/ml)	RM21509
10X T4 RNA Ligase Reaction Buffer	RM20146
50% PEG 8000	RM20133

Product Description

T4 RNA Ligase 2, truncated (T4 Rnl2 truncated) specifically ligates the pre-adenylated 5´end of DNA or RNA to the 3´end of RNA. The enzyme does not require ATP for ligation but does need the pre-adenylated substrate. T4 Rnl2 truncated is expressed from a plasmid in *E. coli* which encodes the first 249 amino acids of the full length T4 RNA Ligase 2. Unlike the full length ligase, T4 Rnl2 truncated is unable to adenylate the 5´end of the substrate, and as a result it cannot ligate the phosphorylated 5´end of RNA or DNA to the 3´end of RNA . This enzyme, also known as Rnl2 (1-249) has been used for optimized linker ligation for the cloning of microRNAs. This enzyme reduces background ligation because it can only use adenylated primers.

Application Features

- Ligate a pre-adenylated DNA or RNA sequence tag to any RNA 3´-end
- Join a single stranded adenylated primer to small RNAs for cDNA library creation
- Join a single stranded adenylated primer to RNA for strand-specific cDNA library construction

Product Source:

An *E. coli* strain that carries the cloned truncated T4 RNA Ligase 2 gene.

Unit Definition:

200 units is defined as the amount of enzyme required to give 80% ligation of a 31-mer RNA to the pre-adenylated end of a 17-mer DNA Universal miRNA Cloning Linker in a total reaction volume of 20 µl in 1 hour at 25 ℃.

Reaction Conditions

1X T4 RNA Ligase Reaction Buffer, Incubate at 25 ℃

1X T4 RNA Ligase Reaction Buffer:

50 mM Tris-HCl, 10 mM $MgCl_2$, 1 mM DTT, pH 7.5 @ 25 ℃

Storage Temperature:

-20 ℃

Storage Conditions:

10 mM Tris-HCl, 100 mM NaCl, 0.1 mM DTT, 0.1 mM EDTA, 50% Glycerol, pH 7.5 @ 25 ℃

Heat Inactivation:

65 ℃ for 20 min

QC Process:

- Purity is above 95% detected by SDS-PAGE.
- No endonucleases, ss-DNase and other RNases contamination.
- Host genomic DNA is no residual detected by PCR.