T4 RNA Ligase 2 (Truncated)

CATALOG NO.: M1220-100

AMOUNT: 20000 U (100 µl)

CONCENTRATION: 200 U/µl

PRODUCT SOURCE: Recombinant *E. coli*

FORM: Liquid

KIT COMPONENTS:

Components	Volume	Part No.
T4 RNA Ligase 2 (dsRNA Ligase)	100 µl (20000 U)	M1220-XX-1
10X T4 RNA Ligase Reaction Buffer	300 µl	M1220-XX-2
PEG 6000 (50% v/v)	160 µl	M1220-XX-3

DESCRIPTION: T4 RNA Ligase 2 (Truncated) catalyzes the formation of a phosphodiester bond between a pre-adenylated 5' phosphate (DNA or RNA) and the 3' hydroxyl of RNA. This truncated enzyme contains the first 249 amino acids and does not require ATP for ligation but does require a pre-adenylated 5' terminal donor. In cases where the substrate is pre-adenylated on the 5' end, T4 RNA ligase 2 (Truncated) is a better choice compared to the full-length enzyme (Cat. No. M1219-100) because it generates less side-reaction ligation products as it cannot ligate the phosphorylated 5´ end of RNA or DNA to the 3´ end of RNA.

APPLICATIONS:
1. Ligating pre-adenylated DNA or RNA to the 3' end of RNA
2. Ligating single stranded adenylated primers to RNA for cDNA library and generation
3. for strand-specific cDNA library construction

UNIT DEFINITION: One unit is defined as the amount of T4 RNA Ligase 2 (Truncated) required to ligate 50% of 0.4 µg of an equimolar mix of a single-stranded 5' FAM-labelled 17-mer RNA to the 5' preadenylated end of an 18-mer DNA when both 17-mers are annealed to a complementary 35-mer DNA strand in a total reaction volume of 20 µl in 30 minutes at 37°C.

STORAGE BUFFER: 10 mM Tris-HCl (pH 7.5), 100 mM NaCl, 0.1 mM EDTA, 1 mM DTT and 50% (v/v) Glycerol

STORAGE CONDITIONS: Store at -20°C. Avoid repeated freeze-thaw cycles of all components to retain maximum performance. All components are stable for one year from the date of shipping when stored and handled properly.

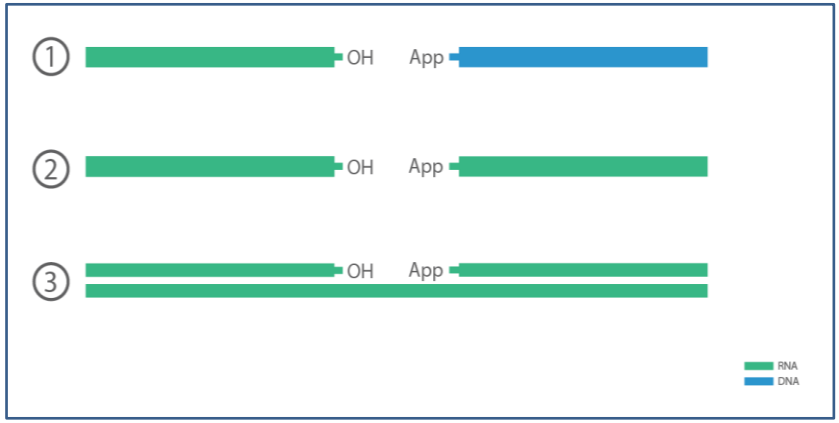
10X T4 RNA LIGASE REACTION BUFFER COMPONENTS: 500 mM Tris-HCl, 100 mM $MgCl_2$, 10 mM DTT, pH 7.5

REACTION CONDITIONS: Use 1X T4 RNA Ligase Reaction Buffer and incubate at 25°C.

Pre-adenylated oligos allow for very high ligation efficiency in usually 1-2 hours at 25°C. If more complete ligation reactions are desired, reaction times can be increased to 24 hours or more.

For long ligations, it is recommended to incubate below 16°C. Also, ligation on ice for 24 hours has been demonstrated to be effective. The addition of PEG 4000, 6000 and 8000 to 15% (v/v) can also increase efficiency.

HEAT INACTIVATION: 65°C for 15 minutes.



RELATED PRODUCTS:
- New T4 DNA Ligase M1247-200
- T4 DNA Ligase (5 u/µl) 9101-250
- T4 RNA Ligase 1 (ssRNA Ligase) M1218-100
- T4 RNA Ligase 2 (dsRNA Ligase) M1219-100

FOR RESEARCH USE ONLY! Not to be used on humans.

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