Code; RP6T7
Size; 10,000 units

COSMO BIO CO., LTD.
Inspiration for Life Science

T7 RNA Polymerase
(Recombinant)

Supplied Reagents
・T7 RNA Polymerase
・10 X T7 RNA Polymerase Buffer

Concentration : 50 units/ μL

Storage : -20 °C

Description : T7 RNA Polymerase catalyzes the synthesis of RNA in the presence of the DNA template including T7 phage promoter.

Storage Buffer :
20 mM Potassium Phosphate (pH7.7)
100 mM NaCl
1 mM DTT
1 mM EDTA
50 % Glycerol

10 X T7 RNA Polymerase reaction buffer :
400 mM Tris-HCl (pH8.0)
200 mM NaCl
60 mM $MgCl_2$
20 mM Spermidine
100 mM DTT

Source : Recombinant protein, expressed in *E.coli*.

Purity :
> 95%, as determined by SDS-PAGE visualized by CBB stain.

Absence of endonucleases :
Incubation of 250 units of enzyme with 1 μg λ DNA-Hind III fragments for 16 hours at 37°C in reaction buffer gave no detectable banding pattern or degradation of λ DNA- DNA-Hind III fragments.

Absence of RNases :
Incubation of 250 units for 5 hours at 37°C in reaction buffer with 2 μg 16S, and 23S rRNA resulted in no detectable degradation of the RNA.

Unit definition :
One unit of RNA polymerase catalyzes the incorporation of 1nmole of a labeled ribonucleoside triphosphate into RNA in 1 hour at 37°C and pH 8.0 using a DNA template with the T7 promoter.

Applications
・Synthesis of single-strand RNA
・Synthesis of labeled RNA probe
・Synthesis of precursors of siRNA.

Standard Application :
A) Reagents to be supplied by user
• template DNA including T7 promotor
• Ribonucleoside triphosphates
• Nuclease-Free Water
• RNase inhibitor (Optional)

B) Synthesis of single-stranded RNA
1. Prepare the following reaction mixture in a sterile microcentrifuge tube.

10 X T7 RNA Polymerase buffer	5 μL
NTP	each 0.5mM
Template DNA	1 μg
T7 RNA Polymerase (50 units/μL)	1 μL
Nuclease-Free Water	up to 50 μL
RNase inhibitor	Optional

2. Incubate at 37°C for 1 hour

References :

1) Davanloo, P. *et al.*, *Proc. Natl. Acad. Sci. USA*, 81, 2035 (1984).
2) Zawadzki, V. and Gross, H.J., Nucleic Acids Research, 19, 1948 (1991).

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