**T7 RNA Polymerase**

**Cat. No. 18033-019**

**Conc.:** 50 U/µl

**Size:** 2,500 units

**Store at -20°C (not frost-free).**

**Description:**
T7 RNA Polymerase is a DNA-dependent RNA polymerase which has been isolated from *E. coli* expressing the T7 RNA polymerase gene on a plasmid (1). The enzyme has an extremely high specificity for T7 promoter sequences (2) and will synthesize large quantities of RNA from a DNA fragment inserted downstream from a promoter. A strong class III promoter (3) has been used to construct various cloning vectors, and inserts into the multiple cloning site of these vectors can be transcribed to generate discrete RNA's.

**Components:**
18033-019  T7 RNA Polymerase
Y90108  5X T3/T7 Buffer
Y00147  0.1 M DTT

**Unit Definition:**
One unit incorporates 1 nmol of labeled nucleotide into acid-precipitable material in 1 hour at 37°C.

**Storage Buffer:**
20 mM Tris-HCl (pH 7.5)  0.1 M NaCl
0.1 mM EDTA  1 mM DTT
50% (v/v) glycerol  0.01% (w/v) Triton® X-100

**5X T3/T7 Buffer:**
0.2 M Tris-HCl (pH 8.0)  40 mM MgCl₂
10 mM spermidine-(HCl)₃  125 mM NaCl
Refer to Functional Assay

Conditions on reverse side for further details.

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Quality Control:
This product has passed the following quality control assays: functional absence of exonuclease, endo-ribonuclease and DNA nicking activities; performance in a transcription reaction.

The enclosed buffers were assayed with the enzyme and met quality control specifications.

Functional Assay Conditions:
2 µl 5X T3/T7 Buffer
70 µM [α-32P]UTP (280 µCi of 400 Ci/mmole)
0.4 mM each ATP, CTP, GTP
5 mM DTT
0.1 µg linearized template DNA
50 units T7 RNA Polymerase
Reaction Volume: 10 µl
Incubation: 10 minutes at 37°C

NOTE: The reaction is not set up on ice due to potential precipitation of DNA in the presence of spermidine.

References:

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