

# T7 RNA Polymerase



<b>Catalog #</b>	3723
<b>Package Size</b>	25,000 units
<b>Volume</b>	500 µl
<b>Concentration</b>	50 units/µl

## Description

Intact Genomics Bacteriophage T7 RNA Polymerase is a DNA-dependent RNA polymerase that is highly specific for the bacteriophage T7 promoter and terminator sequences. T7 RNA Polymerase catalyzes in vitro RNA synthesis in a 5'→3' direction from a cloned DNA sequence under the T7 promoters. The enzyme can incorporate labeled or unlabeled nucleotide triphosphates into an RNA transcript

## Protein Purity

The physical purity of this enzyme is ≥95% as assessed by SDS-PAGE with Coomassie® blue staining (see figure below).

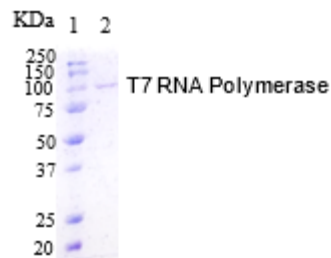


Fig. 1: Lane 1, Protein marker and lane 2, T7 RNA Polymerase.

## Product Source

E. coli BL21 (DE3) strain expressing T7 RNA Polymerase gene.

## Applications

- Radiolabeled RNA probe preparation
- RNA synthesis from DNA template
- sgRNA and mRNA synthesis
- Applications in mRNA therapeutics

## Product Includes

- 1) T7 RNA Polymerase
- 2) 10X T7 RNA Polymerase reaction buffer

## Storage Temperature

-20°C

## 10x T7 RNA Polymerase reaction buffer

400 mM Tris-HCl  
60 mM MgCl<sub>2</sub>  
10 mM DTT  
20 mM spermidine  
pH 7.9 @ 25°C

## Storage Buffer

50 mM Tris-HCl  
100 mM NaCl  
20 mM β-ME  
1 mM EDTA  
50% Glycerol  
0.1% (w/v) Triton® X-100  
pH 7.9 @ 25°C

## Quality Control assays

T7 RNA polymerase is free from detectable nuclease activities.

## Protocol

1. Add the following components to make the reaction mixture:

Component	Volume
Template DNA	0.2-1 µg
10X T7 RNA Polymerase reaction buffer	2.0 µl
NTP (10 mM each)	1.0 µl each
RNase inhibitor (40 U/µl) (optional)	0.5 µl
DTT (100 mM) (optional)	1.0 µl
T7 RNA Polymerase	2.0 µl
H <sub>2</sub> O up to	20.0 µl

2. Incubate at 37°C for 60 minutes. For shorter transcripts (< 300 nt), incubate at 37°C for at least 2 hours.

## Related Products

- RNase Inhibitor, Murine (Cat.# 3714)
- igScript™ One Step RT-qPCR Kit (Cat.# 4214)
- igScript™ First Strand cDNA Synthesis Kit (Cat.# 4312)
- ig® SYBR Green qPCR 2x Master Mix (Cat.# 3354)
- igScript™ Reverse Transcriptase (Cat# 3344)
- igScript™ Probe Based One Step RT-qPCR Kit (Cat.#4243, 4245, 4247)