



T7 RNA Polymerase

Manual

Catalog #	3292	3295
Package Size	5,000 units	25,000 units



Important!

-20°C Storage Required

- * Immediately inspect packages
- * Freeze upon receipt



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Description:

Bacteriophage T7 RNA Polymerase (RNAP) is a highly processive DNA-dependent RNA polymerase that catalyzes the transcription of T7 genes¹. It acts by unwinding the double-stranded DNA to provide access to the coding strand for transcription initiation (Figure 1). The 99 kDa enzyme catalyzes *in vitro* RNA synthesis from a cloned DNA sequence under T7 promoters. RNA produced using the T7 RNAP is suitable for many applications in research and biotechnology.

Intact Genomics IG[®] T7 RNAP is a purified recombinant T7 bacteriophage enzyme that is expressed and purified from *E. coli*. This enzyme is designed to perform *in vitro* transcription of a gene under a phage T7 promoter. The physical purity of this enzyme is $\geq 85\%$ as assessed by SDS-PAGE with Coomassie[®] blue staining and gel densitometry (Figure 2).

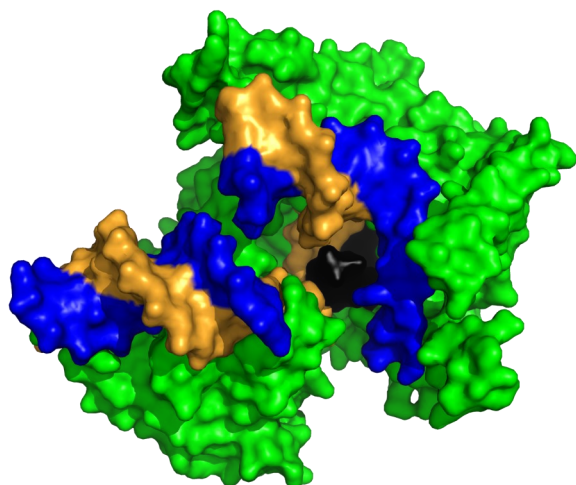
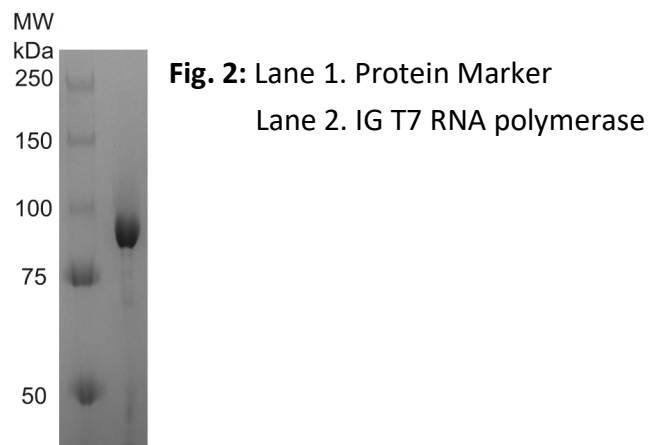


Fig. 1: The T7 RNAP enzyme is a protein that binds to and transcribes RNA from double-stranded DNA. A molecular surface representation of T7 RNAP in complex with DNA (PDB ID# 3e2e) is shown in the early stages of transcription. Protein residues - green, DNA - orange and blue strands, Initiating RNA strand - black.



Product Source:

E. coli BL21 (DE3) strain expressing a recombinant T7 RNA polymerase gene (*T7 gene 1*) with an N-terminal 6xHis tag.

Components and Storage:

The T7 RNA Polymerase product contains the items below. Store all components at -20°C.

- T7 RNA Polymerase 25000 Units (50,000 Units/mL)
- Storage Buffer (50 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, pH 7.5 @ 25 °C)

Quality Control Assays:

T7 RNA Polymerase is free from detectable RNase, Endonuclease (nicking), and DNase activities.

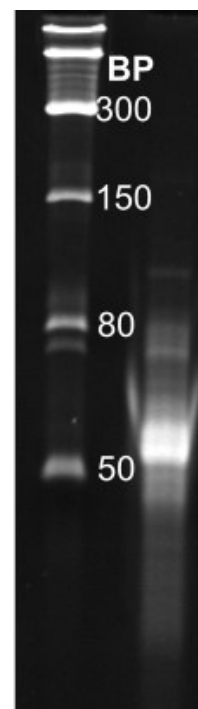
Functional Testing:

IG[®] T7 RNA Polymerase functional testing was done by performing *in vitro* transcription with the IG[®] sgRNA synthesis kits (Figure 3, also see Intact Genomics Catalog numbers 3203 and 3303.)

Figure 3: Synthesized RNA product analyzed on a Urea/TBE-PAGE RNA gel.

Lane 1: RNA ladder

Lane 2: IG synthesized guide RNA (60 bases)



Related Products:

- RNase Inhibitor (Cat #3714)
- T4 Polynucleotide Kinase (PNK, Cat.# 3232)
- sgRNA synthesis kit (Cat #s 3203, 3206, 3303 and 3306)
- IG[®] RNA Cleanup kit (Cat #s 4003 and 4005)
- *Taq* DNA Polymerase (Cat # 3243)
- *Taq* DNA Polymerase 2x Premix (Cat # 3249)
- T4 DNA Ligase (Cat # 3212)
- ig[®] 10B Chemically Competent Cells (Cat # 1011-12)

Ordering Information:

- Order online within the USA. Place orders on **www.intactgenomics.com** using our secure Shopping Cart.
- Order by email, phone, or fax.
Email: **sales@intactgenomics.com**
Phone: (314) 942-3655 | Toll-free : 855-835-7172 | Fax: (314) 942-3656
- Order via our distributors.

References:

1. Chamberlin, M., Mcgrath, J. & Waskell, L. New RNA Polymerase from *Escherichia coli* infected with Bacteriophage T7. *Nature* 228, 227–231 (1970).

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Our hours are Monday - Friday, 8AM to 5PM, U.S. Central Standard Time.

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