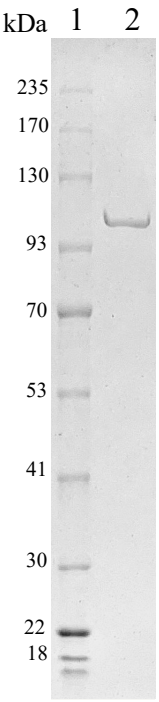
Aurora Biolabs
High Purity Protein for Research

Recombinant T7 RNA Polymerase

Catalog Number: 777627

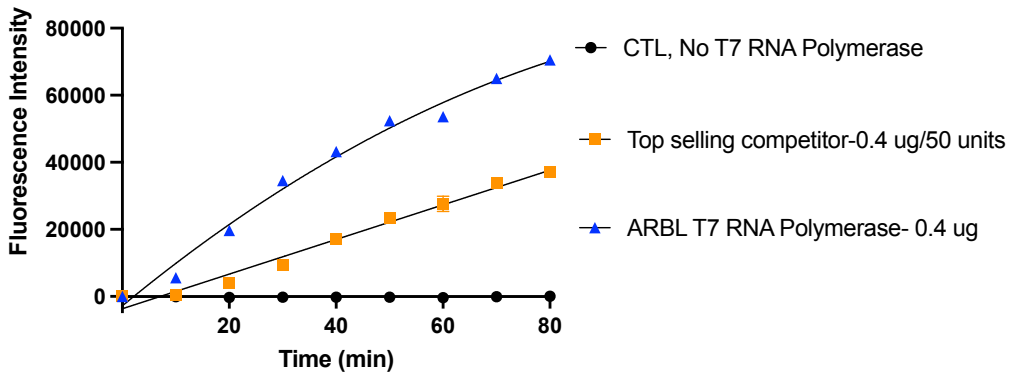
Product Name	Recombinant Bacteriophage T7 RNA Polymerase
Synonym(s)	DNA-directed RNA Polymerase
Quantity	5,000 units, 25,000 units
Catalog Number	777627
Concentration	50,000 Units/ml
Molecular weight	100 kDa
Purity	>95% by SDS-PAGE
Tag	N-terminal 6xHis-tag
Expression Source	E. coli
GenBank Accession #	M38308.1, a. a. 2-882
Application	RNA production for probe generation, vaccine development, RNA structural and/or catalytic investigation
Formulation	50 mM Tris Cl pH 7.9, 130 mM NaCl, 20 mM BME, 1 mM EDTA, 0.1% Tween-20, 50% glycerol
Storage and Stability	Stable for 12 months at -20°C, Avoid freeze/thaw cycles
Description	Bacteriophage T7 RNA Polymerase is a 99 kDa protein that recognizes T7 phage promoters with high specificity and subsequently initiates transcription. T7 RNA polymerase is a single subunit, highly processive and stable enzyme, characteristics that make it suitable for a broad range of biochemistry and molecular biology applications.
Reference	• Cold Spring Harb Protoc; 2013; doi:10.1101/pdb. prot078527 • Kartje ZJ, Janis HI, Mukhopadhyay S, Gagnon KT. J Biol Chem. 2021 Jan-Jun;296:100175. doi: 10.1074/jbc.RA120.014553.

SDS-PAGE gel



1 – MW Marker
2 – T7 RNA Pol

T7 RNA Polymerase Activity



Aurora Biolabs, 10052 Mesa Ridge Court, Suite 103, San Diego, CA 92121, USA; www.aurorabiolabs.com; order@aurorabiolabs.com; info@aurorabiolabs.com Tel: 858-214-4510 or 858453-5700 Fax: 855-898-3979

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Components and Storage

Components	5000 U	25000 U	100000 U
T7 RNA Polymerase (50 U/μL)	100 μL	500 μL	2 mL
10X Reaction Buffer	100 μL	500 μL	2 mL
Store all the kit components at -20°C.			

Protocol for Standard RNA Synthesis

Assemble the reaction at room temperature in the following order.

Components	Amount	Concentration
Nuclease-free water	X μl	
10X Reaction Buffer	2 μl	
NTP	X μl	0.5 mM each
Template DNA	X μl	0.2–1 μg
RNase Inhibitor (optional)	0.5 μl	1 U/μl final
Fresh DTT (optional)	X μl	5 mM final
T7 RNA Pol	2 μl	
Total Volume	20 μl	

1) Mix thoroughly. Incubate at 37°C for 1 hour. For shorter (< 300 nt) transcripts incubate at 37°C for 2–16 hours.
2) (Optional) Add 1μL of DNase I to the reaction system and incubate at 37°C for 15min to digest the DNA template. Compared with the product RNA, the content of template DNA is very low. Generally, it does not need to be removed, and it can also be digested with DNase I.
3) Continue to purify the synthesized RNA or detect the transcription product by gel electrophoresis.