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New England Biolabs Certificate of Analysis

Product Name: T7 RNA Polymerase

Catalog Number: M0251L
Concentration: 50,000 U/ml

Unit Definition: One unit is defined as the amount of enzyme that will incorporate 1

nmol ATP into acid-insoluble material in a total reaction volume of 50 µl in 1 hour at 37°C in 1X RNA Polymerase Reaction Buffer.

Packaging Lot Number: 10122508
Expiration Date: 09/2023
Storage Temperature: -20°C

Storage Conditions: 100 mM NaCl, 50 mM Tris-HCl (pH 7.9), 1 mM EDTA, 20 mM BME, 0.1 %

Triton X-100, 50 % Glycerol

Specification Version: PS-M0251S/L v3.0

T7 RNA Polymerase Component List				
NEB Part Number	Component Description	Lot Number	Individual QC Result	
M0251LVIAL	T7 RNA Polymerase	10117895	Pass	
B9012SVIAL	RNAPol Reaction Buffer	10120450	Pass	

Assay Name/Specification	Lot # 10122508
Protein Purity Assay (SDS-PAGE)	Pass
T7 RNA Polymerase is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.	
Promoter Specificity A 50 µl reaction in RNAPol Reaction Buffer in the presence of 2 mM NTPs containing 1 µg of Lambda DNA as a template and a minimum of 200 units of T7 RNA Polymerase incubated for 1 hour at 37°C results in <1.5% of the amount of product incorporated as compared to a control reaction using T7 DNA as a template.	Pass
Endonuclease Activity (Nicking) A 50 μl reaction in RNAPol Reaction Buffer containing 1 μg of supercoiled PhiX174 DNA and a minimum of 150 units of T7 RNA Polymerase incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
Exonuclease Activity (Radioactivity Release) A 50 µl reaction in RNAPol Reaction Buffer containing 1 µg of a mixture of single	Pass



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Assay Name/Specification	Lot # 10122508	
and double-stranded [³H] E. coli DNA and a minimum of 150 units of T7 RNA Polymerase incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.		
Non-Specific DNase Activity (16 Hour) A 50 μl reaction in RNAPol Reaction Buffer containing 1 μg of Lambda DNA and a minimum of 250 units of T7 RNA Polymerase incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	Pass	
RNase Activity (Extended Digestion) A 10 µl reaction in RNAPol Reaction Buffer containing 40 ng of a 300 base single-stranded RNA and a minimum of 50 units of T7 RNA Polymerase is incubated at 37°C. After incubation for 4 hours, >90% of the substrate RNA remains intact as	Pass	

This product has been tested and shown to be in compliance with all specifications.

determined by gel electrophoresis using fluorescent detection.

One or more products referenced in this document may be covered by a 3rd-party trademark. Please visit www.neb.com/trademarks for additional information.

Bhairavi Jani Production Scientist

21 Sep 2021

Michael Tonello

Packaging Quality Control Inspector

21 Sep 2021



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