

## New England Biolabs Certificate of Analysis

**Product Name:** Exonuclease VII  
**Catalog Number:** M0379S  
**Concentration:** 10,000 U/ml  
**Unit Definition:** One unit is defined as the amount of enzyme that will catalyze the release of 1 nmol of acid-soluble nucleotide in a total reaction volume of 50 µl in 30 minutes at 37°C.  
**Packaging Lot Number:** 10188454  
**Expiration Date:** 04/2025  
**Storage Temperature:** -20°C  
**Storage Conditions:** 100 mM NaCl, 50 mM Tris-HCl, 1 mM DTT, 0.1 mM EDTA, 50 % Glycerol, 0.1 % Triton®X-100, (pH 7.5 @ 25°C)  
**Specification Version:** PS-M0379S/L v1.0

Exonuclease VII Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0379SVIAL	Exonuclease VII	10184025	Pass
B0379SVIAL	Exonuclease VII Reaction Buffer	10153855	Pass

Assay Name/Specification	Lot # 10188454
<b>Endonuclease Activity (Circular Single Stranded DNA)</b> A 50 µl reaction in NEBuffer 4 containing 1 µg of M13 single-stranded DNA and a minimum of 10 units of Exonuclease VII incubated for 1 hour at 37°C results in <20% conversion to linear DNA as determined by agarose gel electrophoresis.	Pass
<b>Endonuclease Activity (Nicking)</b> A 50 µl reaction in NEBuffer 4 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 10 units of Exonuclease VII incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
<b>Exonuclease Activity (Radioactivity Release, Double Stranded)</b> A 50 µl reaction in NEBuffer 4 containing 1 µg double stranded [ <sup>3</sup> H] E. coli DNA and a minimum of 10 units of Exonuclease VII incubated for 4 hours at 37°C releases <0.5% of the total radioactivity.	Pass
<b>Non-Specific DNase Activity (16 Hour)</b> A 50 µl reaction in NEBuffer 4 containing 1 µg of HaeIII digested PhiX174 RF I DNA and a minimum of 10 units of Exonuclease VII incubated for 16 hours at 37°C results	Pass

Assay Name/Specification	Lot # 10188454
<p>in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</p>	
<p><b>Protein Purity Assay (SDS-PAGE)</b> Exonuclease VII is <math>\geq 95\%</math> pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p>	<b>Pass</b>
<p><b>RNase Activity Assay (4 Hour Digestion)</b> A 10 <math>\mu</math>l reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 10 units of Exonuclease VII is incubated at 37°C. After incubation for 4 hours, &gt;90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.</p>	<b>Pass</b>
<p><b>qPCR DNA Contamination (E. coli Genomic)</b> A minimum of 10 units of Exonuclease VII is screened for the presence of E. coli genomic DNA using SYBR<sup>®</sup> Green qPCR with primers specific for the E. coli 16S rRNA locus. Results are quantified using a standard curve generated from purified E. coli genomic DNA. The measured level of E. coli genomic DNA contamination is <math>\leq 1</math> E. coli genome.</p>	<b>Pass</b>

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

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