

## New England Biolabs Certificate of Analysis

**Product Name:** Exonuclease I (E.coli)  
**Catalog Number:** M0293L  
**Concentration:** 20,000 U/ml  
**Unit Definition:** One unit is defined as the amount of enzyme that will catalyze the release of 10 nmol of acid-soluble nucleotide in a total reaction volume of 100 µl in 30 minutes at 37°C in 1X Exonuclease I Reaction Buffer with 0.17 mg/ml single-stranded [<sup>3</sup>H]-DNA.  
**Packaging Lot Number:** 10208339  
**Expiration Date:** 04/2025  
**Storage Temperature:** -20°C  
**Storage Conditions:** 100 mM NaCl, 10 mM Tris-HCl, 0.5 mM EDTA, 5 mM BME, 50 % Glycerol, 100 µg/ml BSA, (pH 7.5 @ 25°C)  
**Specification Version:** PS-M0293S/L v1.0

Exonuclease I (E.coli) Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0293LVIAL	Exonuclease I (E.coli)	10183141	Pass
B0293SVIAL	Exonuclease I Reaction Buffer	10181126	Pass

Assay Name/Specification	Lot # 10208339
<p><b>Endonuclease Activity (Circular Single Stranded DNA)</b>            A 50 µl reaction in Exonuclease I Reaction Buffer containing 1 µg of M13mp18 Single-stranded DNA and a minimum of 100 units of Exonuclease I (E. coli) incubated for 16 hours at 37°C results in &lt;10% conversion to linear DNA as determined by agarose gel electrophoresis.</p>	Pass
<p><b>Endonuclease Activity (Nicking)</b>            A 50 µl reaction in Exonuclease I Reaction Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 100 units of Exonuclease I (E. coli) incubated for 16 hours at 37°C results in &lt;10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>	Pass
<p><b>Exonuclease Activity (Radioactivity Release, Double Stranded)</b>            A 50 µl in Exonuclease I Reaction Buffer containing 0.2 µg [<sup>3</sup>H] CpG methylated Lambda DNA and a minimum of 50 units of Exonuclease I (E. coli) incubated for 4 hours at 37°C releases &lt;0.5% of the total radioactivity.</p>	Pass

Assay Name/Specification	Lot # 10208339
<p><b>Protein Purity Assay (SDS-PAGE)</b> Exonuclease I (E. coli) is <math>\geq 95\%</math> pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p>	<b>Pass</b>
<p><b>RNase Activity (Extended 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 1 <math>\mu</math>l of Exonuclease I (E. coli) is incubated at 37°C. After incubation for 16 hours, <math>&gt;90\%</math> 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 20 units of Exonuclease I (E. coli) 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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Penghua Zhang  
Production Scientist  
04 Apr 2023



Josh Hersey  
Packaging Quality Control Inspector  
27 Sep 2023