

## New England Biolabs Certificate of Analysis

**Product Name:** BgIII  
**Catalog Number:** R0144M  
**Concentration:** 50,000 U/ml  
**Unit Definition:** One unit is defined as the amount of enzyme required to digest 1 µg of Lambda DNA in NEBuffer r3.1 in 1 hour at 37°C in a total reaction volume of 50 µl.  
**Packaging Lot Number:** 10159540  
**Expiration Date:** 08/2024  
**Storage Temperature:** -20°C  
**Storage Conditions:** 50 mM TES, 500 mM NaCl, 200 µg/ml rAlbumin, 50% Glycerol, (pH 8.0 @ 25°C)  
**Specification Version:** PS-R0144M v3.0

BgIII Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
R0144MVIAL	BgIII	10159539	Pass
B7024AVIAL	Gel Loading Dye, Purple (6X)	10156427	Pass
B6003SVIAL	NEBuffer™ r3.1	10146826	Pass

Assay Name/Specification	Lot # 10159540
<b>Blue-White Screening (Terminal Integrity)</b> A sample of LITMUS28i vector linearized with a 10-fold excess of BgIII, religated and transformed into an E. coli strain expressing the LacZ beta fragment gene results in <1% white colonies.	Pass
<b>Ligation and Recutting (Terminal Integrity)</b> After a 20-fold over-digestion of Lambda DNA with BgIII, >95% of the DNA fragments can be ligated with T4 DNA ligase in 16 hours at 16°C. Of these ligated fragments, >95% can be recut with BgIII.	Pass
<b>Protein Purity Assay (SDS-PAGE)</b> BgIII is >95% pure as determined by SDS PAGE analysis using Coomassie Blue detection.	Pass
<b>Non-Specific DNase Activity (16 Hour)</b> A 50 µl reaction in NEBuffer™ r3.1 containing 1 µg of Lambda DNA and a minimum of 100 units of BgIII incubated for 16 hours at 37°C results in a DNA pattern free of	Pass

Assay Name/Specification	Lot # 10159540
<p>detectable nuclease degradation as determined by agarose gel electrophoresis.</p> <p><b>qPCR DNA Contamination (E. coli Genomic)</b> A minimum of 10 units of BglII is screened for the presence of E. coli genomic DNA using SYBR® 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>
<p><b>Functional Testing (15 minute Digest)</b> A 50 <math>\mu</math>l reaction in NEBuffer™ r3.1 containing 1 <math>\mu</math>g of Lambda DNA and 1 <math>\mu</math>l of BglII incubated for 15 minutes at 37°C results in complete digestion as determined by agarose gel electrophoresis.</p>	<b>Pass</b>
<p><b>Exonuclease Activity (Radioactivity Release)</b> A 50 <math>\mu</math>l reaction in NEBuffer™ r3.1 containing 1 <math>\mu</math>g of a mixture of single and double-stranded [<sup>3</sup>H] E. coli DNA and a minimum of 100 units of BglII incubated for 4 hours at 37°C releases &lt;0.1% of the total radioactivity.</p>	<b>Pass</b>
<p><b>Endonuclease Activity (Nicking)</b> A 50 <math>\mu</math>l reaction in NEBuffer™ r3.1 containing 1 <math>\mu</math>g of supercoiled PhiX174 DNA and a minimum of 10 units of BglII incubated for 4 hours at 37°C results in &lt;10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>	<b>Pass</b>

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

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09 Sep 2022



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