

## New England Biolabs Certificate of Analysis

**Product Name:** BsgI  
**Catalog Number:** R0559L  
**Concentration:** 5,000 U/ml  
**Unit Definition:** One unit is defined as the amount of enzyme required to digest 1 µg of Lambda DNA in rCutSmart Buffer in 1 hour at 37°C in a total volume of 50 µl.  
**Packaging Lot Number:** 10253558  
**Expiration Date:** 07/2026  
**Storage Temperature:** -20°C  
**Storage Conditions:** 300 mM NaCl, 10 mM Tris-HCl, 1 mM DTT, 0.1 mM EDTA, 0.32 mM S-adenosylmethionine (SAM), 50% Glycerol, 500 µg/ml rAlbumin (pH 7.4 @ 25°C)  
**Specification Version:** PS-R0559S/L v3.0

BsgI Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
R0559LVIAL	BsgI	10246149	Pass
B6004SVIAL	rCutSmart™ Buffer	10249064	Pass

Assay Name/Specification	Lot # 10253558
<p><b>Exonuclease Activity (Radioactivity Release)</b>            A 50 µl reaction in rCutSmart™ Buffer containing 1 µg of a mixture of single and double-stranded [<sup>3</sup>H] E. coli DNA and a minimum of 50 units of BsgI incubated for 4 hours at 37°C releases &lt;0.1% of the total radioactivity.</p>	<b>Pass</b>
<p><b>Functional Testing (15 minute Digest)</b>            A 50 µl reaction in rCutSmart™ Buffer containing 1 µg of Lambda DNA and 1 µl of BsgI incubated for 15 minutes at 37°C results in complete digestion as determined by agarose gel electrophoresis.</p>	<b>Pass</b>
<p><b>Ligation and Recutting (Terminal Integrity)</b>            After a 5-fold over-digestion of Lambda DNA with BsgI, &gt;95% of the DNA fragments can be ligated with T4 DNA ligase in 16 hours at 16°C. Of these ligated fragments, ~75% can be recut with BsgI.</p>	<b>Pass</b>
<p><b>Non-Specific DNase Activity (16 Hour)</b>            A 50 µl reaction in rCutSmart™ Buffer containing 1 µg of Lambda DNA and a minimum of</p>	<b>Pass</b>

Assay Name/Specification	Lot # 10253558
<p>15 units of BsgI incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</p> <p><b>Protein Purity Assay (SDS-PAGE)</b> BsgI is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p>	<p><b>Pass</b></p>


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

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01 Aug 2024




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