240 County Road
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www.neb.com
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# New England Biolabs
# Certificate of Analysis

| | |
|---|---|
| *Product Name:* | *BglII* |
| *Catalog Number:* | *R0144S* |
| *Concentration:* | *10,000 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:* | *10231438* |
| *Expiration Date:* | *12/2025* |
| *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-R0144S/L/E v3.0* |

**BglII Component List**

| NEB Part Number | Component Description | Lot Number | Individual QC Result |
|---|---|---|---|
| R0144SVIAL | BglII | 10225340 | **Pass** |
| B7024AVIAL | Gel Loading Dye, Purple (6X) | 10221469 | **Pass** |
| B6003SVIAL | NEBuffer™ r3.1 | 10221488 | **Pass** |

| Assay Name/Specification | Lot # 10231438 |
|---|---|
| **Blue-White Screening (Terminal Integrity)**<br>A sample of LITMUS28i vector linearized with a 10-fold excess of BglII, religated and transformed into an E. coli strain expressing the LacZ beta fragment gene results in <1% white colonies. | **Pass** |
| **Endonuclease Activity (Nicking)**<br>A 50 µl reaction in NEBuffer™ r3.1 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 10 units of BglII 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)**<br>A 50 µl reaction in NEBuffer™ r3.1 containing 1 µg of a mixture of single and double-stranded [ $^3$H] E. coli DNA and a minimum of 100 units of BglII incubated for 4 hours at 37°C releases <0.1% of the total radioactivity. | **Pass** |
| **Functional Testing (15 minute Digest)**<br>A 50 µl reaction in NEBuffer™ r3.1 containing 1 µg of Lambda DNA and 1 µl of BglII | **Pass** |

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| Assay Name/Specification | Lot # 10231438 |
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| incubated for 15 minutes at 37ºC results in complete digestion as determined by agarose gel electrophoresis. | |
| **Ligation and Recutting (Terminal Integrity)**<br>After a 20-fold over-digestion of Lambda DNA with BglII, >95% of the DNA fragments can be ligated with T4 DNA ligase in 16 hours at 16ºC. Of these ligated fragments, >95% can be recut with BglII. | **Pass** |
| **Non-Specific DNase Activity (16 Hour)**<br>A 50 µl reaction in NEBuffer™ r3.1 containing 1 µg of Lambda DNA and a minimum of 100 units of BglII incubated for 16 hours at 37ºC results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis. | **Pass** |
| **Protein Purity Assay (SDS-PAGE)**<br>BglII is >95% pure as determined by SDS PAGE analysis using Coomassie Blue detection. | **Pass** |
| **qPCR DNA Contamination (E. coli Genomic)**<br>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 ≤ 1 E. coli genome. | **Pass** |

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



Ana Egana
Production Scientist
21 Feb 2024

Michael Tonello
Packaging Quality Control Inspector
21 Feb 2024