NEW ENGLAND BioLabs Inc.
be INSPIRED drive DISCOVERY stay GENUINE
240 County Road
Ipswich, MA 01938-2723
Tel 978-927-5054
Fax 978-921-1350
www.neb.com
info@neb.com

# New England Biolabs
# Certificate of Analysis

| | |
|---|---|
| *Product Name:* | *BsaI-HF®v2* |
| *Catalog Number:* | *R3733S* |
| *Concentration:* | *20,000 U/ml* |
| *Unit Definition:* | *One unit is defined as the amount of enzyme required to digest 1 µg of pXba DNA in 1 hour at 37°C in a total reaction volume of 50 µl.* |
| *Packaging Lot Number:* | *10132317* |
| *Expiration Date:* | *07/2023* |
| *Storage Temperature:* | *-20°C* |
| *Storage Conditions:* | *10 mM Tris-HCl, 200 mM NaCl, 1 mM DTT, 0.1 mM EDTA, 200 µg/ml BSA, 50 % Glycerol, (pH 7.4 @ 25°C)* |
| *Specification Version:* | *PS-R3733S/L v1.0* |

| **BsaI-HF®v2 Component List** | | | |
|---|---|---|---|
| **NEB Part Number** | **Component Description** | **Lot Number** | **Individual QC Result** |
| R3733SVIAL | BsaI-HF®v2 | 10116344 | **Pass** |
| B7024AVIAL | Gel Loading Dye, Purple (6X) | 10127723 | **Pass** |
| B6004SVIAL | rCutSmart™ Buffer | 10127378 | **Pass** |

| **Assay Name/Specification** | **Lot # 10132317** |
|---|---|
| **Exonuclease Activity (Radioactivity Release)**<br>A 50 µl reaction in CutSmart® Buffer containing 1 µg of a mixture of single and double-stranded [ $^3$H] E. coli DNA and a minimum of 100 units of BsaI-HF®v2 incubated for 4 hours at 37°C releases <0.1% of the total radioactivity. | **Pass** |
| **Endonuclease Activity (Nicking)**<br>A 50 µl reaction in CutSmart® Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 20 units of BsaI-HF®v2 incubated for 4 hours at 37°C results in <20% conversion to the nicked form as determined by agarose gel electrophoresis. | **Pass** |
| **Ligation and Recutting (Terminal Integrity)**<br>After a 20-fold over-digestion of pXba DNA with BsaI-HF®v2, >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 BsaI-HF®v2. | **Pass** |
| **Non-Specific DNase Activity (16 Hour)**<br>A 50 µl reaction in CutSmart® Buffer containing 1 µg of pXba DNA and a minimum of 60 units of BsaI-HF®v2 incubated for 16 hours at 37ºC results in a DNA pattern free of | **Pass** |

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| Assay Name/Specification | Lot # 10132317 |
|---|---|
| detectable nuclease degradation as determined by agarose gel electrophoresis.<br><br>**Protein Purity Assay (SDS-PAGE)**<br>BsaI-HF®v2 is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection. | **Pass** |

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

One or more products referenced in this document may be covered by a 3rd-party trademark. Please visit www.neb.com/trademarks for additional information.

Penghua Zhang
Production Scientist
23 Dec 2021

Josh Hersey
Packaging Quality Control Inspector
23 Dec 2021