NEW ENGLAND BioLabs Inc.
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240 County Road
Ipswich, MA 01938-2723
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New England Biolabs
Certificate of Analysis

Product Name:	*BsaI-HF®v2*
Catalog Number:	*R3733L*
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.*
Lot Number:	*10045888*
Expiration Date:	*05/2021*
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
R3733LVIAL	BsaI-HF®v2	10045889	**Pass**
B7204SVIAL	CutSmart® Buffer	10043351	**Pass**
B7024SVIAL	Gel Loading Dye, Purple (6X)	10043349	**Pass**

Assay Name/Specification	Lot # 10045888
Endonuclease Activity (Nicking) 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**
Exonuclease Activity (Radioactivity Release) 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**
Ligation and Recutting (Terminal Integrity) 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) 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 # 10045888
detectable nuclease degradation as determined by agarose gel electrophoresis. **Protein Purity Assay (SDS-PAGE)** 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.

Doreen Duquette
Production Scientist
21 May 2019

Jay Minichiello
Packaging Quality Control Inspector
21 Jun 2019