

## New England Biolabs Certificate of Analysis

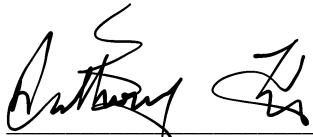
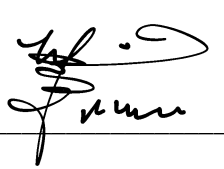
**Product Name:** Bsal-HF<sup>®</sup>  
**Catalog Number:** R3535S  
**Concentration:** 20,000 U/ml  
**Unit Definition:** One unit is defined as the amount of enzyme required to digest 1 µg of pXba DNA in 1 hour at 37°C in a total reaction volume of 50 µl.  
**Lot Number:** 10011834  
**Expiration Date:** 06/2019  
**Storage Temperature:** -20°C  
**Storage Conditions:** 10 mM Tris-HCl, 200 mM NaCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, 200 µg/ml BSA, (pH 7.4 at 25°C)  
**Specification Version:** PS-R3535S v2.0

| Bsal-HF <sup>®</sup> Component List |                              |            |                      |
|-------------------------------------|------------------------------|------------|----------------------|
| NEB Part Number                     | Component Description        | Lot Number | Individual QC Result |
| R3535SVIAL                          | Bsal-HF <sup>®</sup>         | 10011835   | Pass                 |
| B7204SVIAL                          | CutSmart <sup>®</sup> Buffer | 3081804    | Pass                 |
| B7024SVIAL                          | Gel Loading Dye, Purple (6X) | 0251805    | Pass                 |

| Assay Name/Specification   | Lot # 10011834 |
|--|----------------|
| <b>Endonuclease Activity (Nicking)</b><br>A 50 µl reaction in CutSmart <sup>®</sup> Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 20 units of Bsal-HF <sup>®</sup> incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.            | Pass           |
| <b>Exonuclease Activity (Radioactivity Release)</b><br>A 50 µl reaction in CutSmart <sup>®</sup> Buffer containing 1 µg of a mixture of single and double-stranded [ <sup>3</sup> H] E. coli DNA and a minimum of 100 units of Bsal-HF <sup>®</sup> incubated for 4 hours at 37°C releases <0.1% of the total radioactivity. | Pass           |
| <b>Ligation and Recutting (Terminal Integrity)</b><br>After a 20-fold over-digestion of pXba DNA with Bsal-HF <sup>®</sup> , >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 Bsal-HF <sup>®</sup> .                                      | Pass           |
| <b>Non-Specific DNase Activity (16 Hour)</b><br>A 50 µl reaction in CutSmart <sup>®</sup> Buffer containing 1 µg of pXba DNA and a minimum of 200 units of Bsal-HF <sup>®</sup> incubated for 16 hours at 37°C results in a DNA pattern free   | Pass           |

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|--|--------------------|
| <p>of detectable nuclease degradation as determined by agarose gel electrophoresis.</p> <p><b>Protein Purity Assay (SDS-PAGE)</b><br/>Bsal-HF<sup>®</sup> 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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Anthony Francis  
Production Scientist  
12 Jun 2018




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Mary Conlon  
Packaging Quality Control Inspector  
18 Jun 2018