

## New England Biolabs Certificate of Analysis

**Product Name:** Bsal-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:** 10062718  
**Expiration Date:** 07/2021  
**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

Bsal-HF@v2 Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
R3733SVIAL	Bsal-HF@v2	10050316	Pass
B7204SVIAL	CutSmart® Buffer	10061302	Pass
B7024SVIAL	Gel Loading Dye, Purple (6X)	10059229	Pass

Assay Name/Specification	Lot # 10062718
<p><b>Endonuclease Activity (Nicking)</b>            A 50 µl reaction in CutSmart® Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 20 units of Bsal-HF@v2 incubated for 4 hours at 37°C results in &lt;20% conversion to the nicked form as determined by agarose gel electrophoresis.</p>	Pass
<p><b>Exonuclease Activity (Radioactivity Release)</b>            A 50 µl reaction in CutSmart® 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@v2 incubated for 4 hours at 37°C releases &lt;0.1% of the total radioactivity.</p>	Pass
<p><b>Ligation and Recutting (Terminal Integrity)</b>            After a 20-fold over-digestion of pXba DNA with Bsal-HF@v2, &gt;95% of the DNA fragments can be ligated with T4 DNA ligase in 16 hours at 16°C. Of these ligated fragments, &gt;95% can be recut with Bsal-HF@v2.</p>	Pass
<p><b>Non-Specific DNase Activity (16 Hour)</b>            A 50 µl reaction in CutSmart® Buffer containing 1 µg of pXba DNA and a minimum of 60 units of Bsal-HF@v2 incubated for 16 hours at 37°C results in a DNA pattern free of</p>	Pass

Assay Name/Specification	Lot # 10062718
<p>detectable nuclease degradation as determined by agarose gel electrophoresis.</p> <p><b>Protein Purity Assay (SDS-PAGE)</b> Bsal-HF@v2 is <math>\geq</math> 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.



Penghua Zhang  
Production Scientist  
19 Jul 2019



Michael Tonello  
Packaging Quality Control Inspector  
31 Jan 2020