

## New England Biolabs Certificate of Analysis

**Product Name:** EcoRI-HF<sup>®</sup>  
**Catalog #:** R3101S/L  
**Concentration:** 20,000 units/ml  
**Unit Definition:** One unit is defined as the amount of enzyme required to digest 1 µg of Lambda DNA in 1 hour at 37°C in a total reaction volume of 50 µl.  
**Lot #:** 0121511  
**Assay Date:** 11/2015  
**Expiration Date:** 11/2017  
**Storage Temp:** -20°C  
**Storage Buffer:** 300 mM NaCl, 10 mM KPO<sub>4</sub> (pH 7.5), 10 mM DTT, 0.1 mM EDTA, 50% Glycerol, 0.15% Triton X-100, 200 µg/ml BSA  
**Specification Version:** PS-R3101S/L v1.0  
**Effective Date:** 19 Nov 2015

| Assay Name/Specification (minimum release criteria)   | Lot #0121511 |
|---|--------------|
| <b>Blue-White Screening (Terminal Integrity)</b> - A sample of pUC19 vector linearized with a 10-fold excess of EcoRI-HF <sup>™</sup> , religated and transformed into an <i>E. coli</i> strain expressing the LacZ beta fragment gene results in <1% white colonies.   | <b>Pass</b>  |
| <b>Endonuclease Activity (Nicking)</b> - A 50 µl reaction in CutSmart <sup>™</sup> Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 100 Units of EcoRI-HF <sup>™</sup> incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.                  | <b>Pass</b>  |
| <b>Exonuclease Activity (Radioactivity Release)</b> - A 50 µl reaction in CutSmart <sup>™</sup> Buffer containing 1 µg of a mixture of single and double-stranded [ <sup>3</sup> H] <i>E. coli</i> DNA and a minimum of 200 units of EcoRI-HF <sup>™</sup> incubated for 4 hours at 37°C releases <0.1% of the total radioactivity. | <b>Pass</b>  |
| <b>Ligation and Recutting (Terminal Integrity)</b> - After a 20-fold over-digestion of Lambda DNA with EcoRI-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 EcoRI-HF <sup>™</sup> .  | <b>Pass</b>  |
| <b>Non-Specific DNase Activity (16 Hour)</b> - A 50 µl reaction in CutSmart <sup>™</sup> Buffer containing 1 µg of Lambda DNA and a minimum of 100 Units of EcoRI-HF <sup>™</sup> incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.     | <b>Pass</b>  |
| <b>Protein Purity Assay (SDS-PAGE)</b> - EcoRI-HF <sup>™</sup> is >95% pure as determined by SDS PAGE analysis using Coomassie Blue detection.  | <b>Pass</b>  |



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\* The BSA in this product has been granted an EDQM "Certificate of Suitability" from the European Directorate for the Quality of Medicines (# R1-CEP-2003-204-Rev00) and has been granted a USDA Certificate for Export of Bovine Blood Plasma/Serum for Manufacture into Pharmaceutical Products.



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Authorized by  
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19 Nov 2015



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Inspected by  
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04 Dec 2015

