

## New England Biolabs Certificate of Analysis

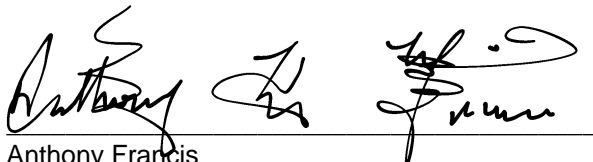
**Product Name:** MfeI-HF®  
**Catalog Number:** R3589L  
**Concentration:** 20,000 U/ml  
**Unit Definition:** One unit is defined as the amount of enzyme required to digest 1 µg of Lambda DNA in 1 hour at 37°C in a total reaction volume of 50 µl.  
**Packaging Lot Number:** 10064531  
**Expiration Date:** 12/2020  
**Storage Temperature:** -20°C  
**Storage Conditions:** 50 mM NaCl, 10 mM Tris-HCl (pH 7.4), 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, 200 µg/ml BSA  
**Specification Version:** PS-R3589S/L v2.0

MfeI-HF® Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
R3589LVIAL	MfeI-HF®	10060893	Pass
B7204SVIAL	CutSmart® Buffer	10065743	Pass
B7024SVIAL	Gel Loading Dye, Purple (6X)	10059229	Pass

Assay Name/Specification	Lot # 10064531
<b>Endonuclease Activity (Nicking)</b> A 50 µl reaction in CutSmart™ Buffer containing 1 µg of supercoiled pUC19 DNA and a minimum of 20 units of MfeI-HF™ incubated for 4 hours at 37°C results in <20% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
<b>Blue-White Screening (Terminal Integrity)</b> A sample of LITMUS38i vector linearized with a 10-fold excess of MfeI-HF™, religated and transformed into an E. coli strain expressing the LacZ beta fragment gene results in <1% white colonies.	Pass
<b>Protein Purity Assay (SDS-PAGE)</b> MfeI-HF™ is >95% pure as determined by SDS PAGE analysis using Coomassie Blue detection.	Pass
<b>Non-Specific DNase Activity (16 Hour)</b> A 50 µl reaction in CutSmart™ Buffer containing 1 µg of Lambda DNA and a minimum of 60 units of MfeI-HF™ incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	Pass

Assay Name/Specification	Lot # 10064531
<p><b>Ligation and Recutting (Terminal Integrity)</b> After a 20-fold over-digestion of Lambda DNA with MfeI-HF™, &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 MfeI-HF™.</p>	<b>Pass</b>
<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 20 units of MfeI-HF™ incubated for 4 hours at 37°C releases &lt;0.1% of the total radioactivity.</p>	<b>Pass</b>

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




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Anthony Francis  
Production Scientist  
04 Dec 2019




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Jay Minichiello  
Packaging Quality Control Inspector  
27 Feb 2020