

New England Biolabs Certificate of Analysis

Product Name: MfeI-HF[®]
Catalog Number: R3589S
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: 10081404
Expiration Date: 08/2021
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
R3589SVIAL	MfeI-HF [®]	10081403	Pass
B7204SVIAL	CutSmart [®] Buffer	10078756	Pass
B7024AVIAL	Gel Loading Dye, Purple (6X)	10082935	Pass

Assay Name/Specification	Lot # 10081404
Protein Purity Assay (SDS-PAGE) MfeI-HF [™] is >95% pure as determined by SDS PAGE analysis using Coomassie Blue detection.	Pass
Non-Specific DNase Activity (16 Hour) 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
Blue-White Screening (Terminal Integrity) 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
Endonuclease Activity (Nicking) 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

Assay Name/Specification	Lot # 10081404
<p>Exonuclease Activity (Radioactivity Release) A 50 µl reaction in CutSmart™ Buffer containing 1 µg of a mixture of single and double-stranded [³H] E. coli DNA and a minimum of 20 units of MfeI-HF™ incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.</p>	Pass
<p>Ligation and Recutting (Terminal Integrity) After a 20-fold over-digestion of Lambda DNA with MfeI-HF™, >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 MfeI-HF™.</p>	Pass

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

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Penghua Zhang
Production Scientist
21 Sep 2020



Josh Hersey
Packaging Quality Control Inspector
21 Sep 2020