

## New England Biolabs Certificate of Analysis

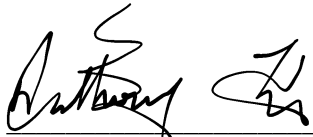
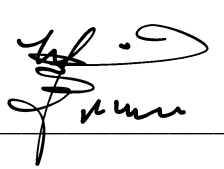
**Product Name:** MfeI  
**Catalog Number:** R0589S  
**Concentration:** 10,000 U/ml  
**Unit Definition:** One unit is defined as the amount of enzyme required to digest 1 µg of Lambda DNA in 1 hour at 37°C in a total reaction volume of 50 µl.  
**Packaging Lot Number:** 10052860  
**Expiration Date:** 08/2020  
**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-R0589S/L v2.0

| MfeI Component List |                       |            |                      |
|---------------------|-----------------------|------------|----------------------|
| NEB Part Number     | Component Description | Lot Number | Individual QC Result |
| R0589SVIAL          | MfeI                  | 10052859   | Pass                 |
| B7204SVIAL          | CutSmart® Buffer      | 10046088   | Pass                 |

| Assay Name/Specification                                                                                                                                                                                                                                                                                            | Lot # 10052860 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <p><b>Blue-White Screening (Terminal Integrity)</b><br/>           A sample of LITMUS38i vector linearized with a 10-fold excess of MfeI, religated and transformed into an E. coli strain expressing the LacZ beta fragment gene results in &lt;1% white colonies.</p>                                             | Pass           |
| <p><b>Endonuclease Activity (Nicking)</b><br/>           A 50 µl reaction in CutSmart™ Buffer containing 1 µg of supercoiled pUC19 DNA and a minimum of 10 units of MfeI incubated for 4 hours at 37°C results in &lt;10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>           | Pass           |
| <p><b>Exonuclease Activity (Radioactivity Release)</b><br/>           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 10 units of MfeI 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><br/>           After a 20-fold over-digestion of Lambda DNA with MfeI, &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.</p>                                    | Pass           |

| Assay Name/Specification                                                                                                                                                                                                                                                                                   | Lot # 10052860     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| <p><b>Non-Specific DNase Activity (16 Hour)</b><br/>A 50 µl reaction in CutSmart™ Buffer containing 1 µg of Lambda DNA and a minimum of 30 Units of MfeI incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</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  
27 Aug 2019




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Michael Tonello  
Packaging Quality Control Inspector  
17 Oct 2019