

## New England Biolabs Certificate of Analysis

**Product Name:** XmnI  
**Catalog Number:** R0194S  
**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:** 10101105  
**Expiration Date:** 03/2023  
**Storage Temperature:** -20°C  
**Storage Conditions:** 50 mM KCl, 10 mM Tris-HCl (pH 7.4), 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, 200 µg/ml BSA  
**Specification Version:** PS-R0194S/L v1.0

| XmnI Component List |                              |            |                      |
|---------------------|------------------------------|------------|----------------------|
| NEB Part Number     | Component Description        | Lot Number | Individual QC Result |
| R0194SVIAL          | XmnI                         | 10101103   | Pass                 |
| B7204SVIAL          | CutSmart® Buffer             | 10097266   | Pass                 |
| B7024AVIAL          | Gel Loading Dye, Purple (6X) | 10091035   | Pass                 |

| Assay Name/Specification                                                                                                                                                                                                                                                                         | Lot # 10101105 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>Protein Purity Assay (SDS-PAGE)</b><br>XmnI is >95% pure as determined by SDS PAGE analysis using Coomassie Blue detection.                                                                                                                                                                   | Pass           |
| <b>Blue-White Screening (Terminal Integrity)</b><br>A sample of pUC19 vector linearized with a 10-fold excess of XmnI, religated and transformed into an E. coli strain expressing the LacZ beta fragment gene results in <1% white colonies.                                                    | Pass           |
| <b>Endonuclease Activity (Nicking)</b><br>A 50 µl reaction in CutSmart™ Buffer containing 1 µg of supercoiled Litmus38i DNA and a minimum of 60 Units of XmnI incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.          | Pass           |
| <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 100 units of XmnI incubated for 4 hours at 37°C releases <0.1% of the total radioactivity. | Pass           |

| Assay Name/Specification                                                                                                                                                                                                                                                                                    | Lot # 10101105 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <p><b>Ligation and Recutting (Terminal Integrity)</b><br/>After a 20-fold over-digestion of Lambda DNA with XmnI, ~75% 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 XmnI.</p>                                          | <b>Pass</b>    |
| <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 100 Units of XmnI incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</p> | <b>Pass</b>    |

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

One or more products referenced in this document may be covered by a 3rd-party trademark. Please visit [www.neb.com/trademarks](http://www.neb.com/trademarks) for additional information.




---

Penghua Zhang  
Production Scientist  
19 Mar 2021




---

Michael Tonello  
Packaging Quality Control Inspector  
19 Mar 2021