

## New England Biolabs Certificate of Analysis

**Product Name:** Xmal  
**Catalog Number:** R0180S  
**Concentration:** 10,000 U/ml  
**Unit Definition:** One unit is defined as the amount of enzyme required to digest 1 µg pXba in 1 hour at 37°C in a total reaction volume of 50 µl.  
**Lot Number:** 10030769  
**Expiration Date:** 09/2020  
**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-R0180S/L v1.0

Xmal Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
R0180SVIAL	Xmal	10022744	Pass
B7204SVIAL	CutSmart® Buffer	10021126	Pass
B7024SVIAL	Gel Loading Dye, Purple (6X)	10021131	Pass

Assay Name/Specification	Lot # 10030769
<b>Endonuclease Activity (Nicking)</b> A 50 µl reaction in CutSmart™ Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 50 Units of Xmal 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> 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 50 units of Xmal incubated for 4 hours at 37°C releases <0.2% of the total radioactivity.	Pass
<b>Ligation and Recutting (Terminal Integrity)</b> After a 10-fold over-digestion of pXba DNA with Xmal, >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 Xmal.	Pass
<b>Non-Specific DNase Activity (16 Hour)</b> A 50 µl reaction in CutSmart™ Buffer containing 1 µg of pXba DNA and a minimum of 10 Units of Xmal incubated for 16 hours at 37°C results in a DNA pattern free of	Pass

Assay Name/Specification	Lot # 10030769
<p>detectable nuclease degradation as determined by agarose gel electrophoresis.</p> <p><b>Protein Purity Assay (SDS-PAGE)</b> Xmal is &gt;95% pure as determined by SDS PAGE analysis using Coomassie Blue detection.</p>	<p><b>Pass</b></p>

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




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Penghua Zhang  
Production Scientist  
28 Sep 2018




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Michael Tonello  
Packaging Quality Control Inspector  
11 Dec 2018