

## New England Biolabs Certificate of Analysis

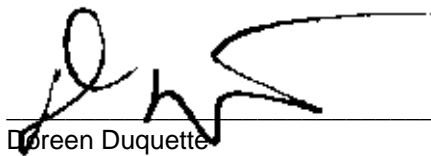
**Product Name:** *HpaI*  
**Catalog Number:** *R0105S*  
**Concentration:** *5,000 U/ml*  
**Unit Definition:** *One unit is defined as the amount of enzyme required to digest 1 µg of Lambda DNA in 1 hour at 37°C in a total reaction volume of 50 µl.*  
**Lot Number:** *10039765*  
**Expiration Date:** *03/2021*  
**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-R0105S/L v1.0*

HpaI Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
R0105SVIAL	HpaI	10039766	Pass
B7204SVIAL	CutSmart® Buffer	10036668	Pass
B7024SVIAL	Gel Loading Dye, Purple (6X)	10038709	Pass

Assay Name/Specification	Lot # 10039765
<p><b>Endonuclease Activity (Nicking)</b>            A 50 µl reaction in CutSmart™ Buffer containing 1 µg of supercoiled pUC19 DNA and a minimum of 15 Units of HpaI 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>            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 HpaI 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>            After a 10-fold over-digestion of Lambda DNA with HpaI, &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 HpaI.</p>	Pass
<p><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 15 Units of HpaI incubated for 16 hours at 37°C results in a DNA pattern free of</p>	Pass

Assay Name/Specification	Lot # 10039765
<p>detectable nuclease degradation as determined by agarose gel electrophoresis.</p> <p><b>Protein Purity Assay (SDS-PAGE)</b> HpaI is ≥ 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.



Doreen Duquette  
Production Scientist  
14 Mar 2019



Michael Tonello  
Packaging Quality Control Inspector  
29 Apr 2019