

New England Biolabs Certificate of Analysis

Product Name: *HpaI*
Catalog Number: *R0105L*
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 rCutSmart Buffer in 1 hour at 37°C in a total reaction volume of 50 µl.*
Packaging Lot Number: *10149793*
Expiration Date: *05/2024*
Storage Temperature: *-20°C*
Storage Conditions: *10 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, 200 µg/ml rAlbumin (pH 7.4 @25°C)*
Specification Version: *PS-R0105S/L/V v2.0*

HpaI Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
R0105LVIAL	HpaI	10149797	Pass
B7024AVIAL	Gel Loading Dye, Purple (6X)	10144740	Pass
B6004SVIAL	rCutSmart™ Buffer	10148729	Pass

Assay Name/Specification	Lot # 10149793
qPCR DNA Contamination (E. coli Genomic) A minimum of 5 units of HpaI is screened for the presence of E. coli genomic DNA using SYBR® Green qPCR with primers specific for the E. coli 16S rRNA locus. Results are quantified using a standard curve generated from purified E. coli genomic DNA. The measured level of E. coli genomic DNA contamination is ≤ 1 E. coli genome.	Pass
Endonuclease Activity (Nicking) A 50 µl reaction in rCutSmart™ 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 <10% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
Exonuclease Activity (Radioactivity Release) A 50 µl reaction in rCutSmart™ Buffer containing 1 µg of a mixture of single and double-stranded [³ H] E. coli DNA and a minimum of 50 units of HpaI incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	Pass
Ligation and Recutting (Terminal Integrity)	Pass

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<p>After a 10-fold over-digestion of Lambda DNA with HpaI, >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 HpaI.</p>	
<p>Protein Purity Assay (SDS-PAGE) HpaI is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p>	Pass
<p>Non-Specific DNase Activity (16 Hour) A 50 µl reaction in rCutSmart™ 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 detectable nuclease degradation as determined by agarose gel electrophoresis.</p>	Pass

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

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Penghua Zhang
Production Scientist
10 May 2022



Michael Tonello
Packaging Quality Control Inspector
10 May 2022