

New England Biolabs Certificate of Analysis

Product Name: *Acul*

Catalog Number: *R0641L*

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: *10268416*

Expiration Date: *12/2026*

Storage Temperature: *-20°C*

Storage Conditions: *10 mM Tris-HCl, 100 mM NaCl, 1 mM DTT, 0.1 mM EDTA, 0.32 mM S-adenosylmethionine (SAM), 50% Glycerol, 200 µg/ml rAlbumin (pH 7.4 @ 25°C)*

Specification Version: *PS-R0641S/L/V v4.0*

Acul Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
R0641LVIAL	Acul	10268422	Pass
B6004SVIAL	rCutSmart™ Buffer	10259597	Pass

Assay Name/Specification	Lot # 10268416
<p>Endonuclease Activity (Nicking) A 50 µl reaction in rCutSmart™ Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 5 units of Acul incubated for 4 hours at 37°C results in <50% conversion to the nicked form as determined by agarose gel electrophoresis.</p>	Pass
<p>Exonuclease Activity (Radioactivity Release) A 50 µl reaction in rCutSmart™ Buffer containing 1 µg of a mixture of single and double-stranded [³H] E. coli DNA and a minimum of 25 units of Acul incubated for 4 hours at 37°C releases <0.2% of the total radioactivity.</p>	Pass
<p>Functional Testing (15 minute Digest) A 50 µl reaction in rCutSmart™ Buffer containing 1 µg of Lambda DNA and 1 µl of Acul incubated for 15 minutes at 37°C results in complete digestion as determined by agarose gel electrophoresis.</p>	Pass
<p>Ligation and Recutting (Terminal Integrity) After a 10-fold over-digestion of Lambda DNA with Acul, ~50% of the DNA fragments</p>	Pass

Assay Name/Specification	Lot # 10268416
<p>can be ligated with T4 DNA ligase in 16 hours at 16°C. Of these ligated fragments, ~75% can be recut with Acul.</p>	
<p>Non-Specific DNase Activity (16 Hour) A 50 µl reaction in rCutSmart™ Buffer containing 1 µg of Lambda DNA and a minimum of 5 units of Acul 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
<p>Protein Purity Assay (SDS-PAGE) Acul is >95% pure as determined by SDS PAGE analysis using Coomassie Blue detection.</p>	Pass
<p>qPCR DNA Contamination (E. coli Genomic) A minimum of 5 units of Acul 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.</p>	Pass

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

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18 Dec 2024



Josh Hersey
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20 Dec 2024