

## New England Biolabs Certificate of Analysis

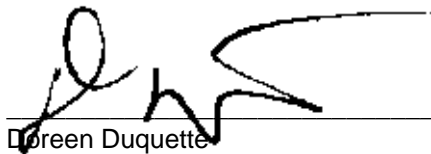
**Product Name:** *EnGen Lba Cas12a (Cpf1)*  
**Catalog Number:** *M0653S*  
**Concentration:** *1,000 Nanomolar*  
**Lot Number:** *10039428*  
**Expiration Date:** *03/2021*  
**Storage Temperature:** *-20°C*  
**Storage Conditions:** *500 mM NaCl, 20 mM Sodium Acetate, 0.1 mM EDTA, 0.1 mM TCEP-HCl, 50% Glycerol, (pH 6.0 @ 25°C)*  
**Specification Version:** *PS-M0653S v2.0*

EnGen Lba Cas12a (Cpf1) Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0653SVIAL	ENGEN® LBA CAS12A (CPF1)	10039237	Pass
B7202SVIAL	NEBuffer™ 2.1	10035939	Pass

Assay Name/Specification	Lot # 10039428
<p><b>Functional Testing (Targeted Digestion)</b>            A 20 µl reaction in 1X NEBuffer 2.1 containing 20 nM of 100 bp FAM and ROX-labeled double-stranded target DNA, 100 nM crRNA, and 100 nM EnGen® Lba Cas12a (Cpf1) incubated for 15 minutes at 37°C results in ≥90% targeted digestion of the substrate DNA as determined by capillary electrophoresis.</p>	Pass
<p><b>Non-Specific DNase Activity (16 Hour)</b>            A 50 µl reaction in NEBuffer 2.1 containing 1 µg of Lambda DNA and a minimum of 1 pmol of EnGen® Lba Cas12a (Cpf1) 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><b>RNase Activity (Extended Digestion)</b>            A 10 µl reaction in NEBuffer 4 containing 40 ng of f-300 RNA transcript and a minimum of 1 pmol of EnGen® Lba Cas12a (Cpf1) is incubated at 37°C. After incubation for 16 hours, &gt;90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.</p>	Pass
<p><b>Exonuclease Activity (Radioactivity Release)</b>            A 50 µl reaction in NEBuffer 2.1 containing 1 µg of a mixture of single and double-stranded [<sup>3</sup>H] E. coli DNA and a minimum of 1 pmol of EnGen® Lba Cas12a</p>	Pass

Assay Name/Specification	Lot # 10039428
<p>(Cpf1) incubated for 4 hours at 37°C releases &lt;0.1% of the total radioactivity.</p> <p><b>Endonuclease Activity (Nicking)</b> A 50 µl reaction in NEBuffer 2.1 containing 1 µg of supercoiled PhiX174 RF I DNA and a minimum of 1 pmol of EnGen® Lba Cas12a (Cpf1) incubated for 4 hours at 37°C results in &lt;10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>	<p><b>Pass</b></p>

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



Doreen Duquette  
Production Scientist  
06 Feb 2019



Michael Tonello  
Packaging Quality Control Inspector  
03 Apr 2019