

## New England Biolabs Certificate of Analysis

**Product Name:** EnGen<sup>®</sup> Lba Cas12a (Cpf1)  
**Catalog #:** M0653S  
**Concentration:** 1  $\mu$ M  
**Unit Definition:** A 20  $\mu$ l 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<sup>®</sup> Lba Cas12a (Cpf1) incubated for 15 minutes at 37°C results in  $\geq$ 90% targeted digestion of the substrate DNA as determined by capillary electrophoresis.  
**Lot #:** 0031711  
**Assay Date:** 11/2017  
**Expiration Date:** 11/2019  
**Storage Temp:** -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 v1.0  
**Effective Date:** 31 Oct 2017

Assay Name/Specification (minimum release criteria)	Lot #0031711
<b>Endonuclease Activity (Nicking)</b> - A 50 $\mu$ l reaction in NEBuffer 2.1 containing 1 $\mu$ g of supercoiled PhiX174 RF I DNA and a minimum of 1 pmol of EnGen <sup>®</sup> Lba Cas12a (Cpf1) incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	<b>Pass</b>
<b>Exonuclease Activity (Radioactivity Release)</b> - A 50 $\mu$ l reaction in NEBuffer 2.1 containing 1 $\mu$ g of a mixture of single and double-stranded [ <sup>3</sup> H] <i>E. coli</i> DNA and a minimum of 1 pmol of EnGen <sup>®</sup> Lba Cas12a (Cpf1) incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	<b>Pass</b>
<b>Non-Specific DNase Activity (16 Hour)</b> - A 50 $\mu$ l reaction in NEBuffer 2.1 containing 1 $\mu$ g of Lambda DNA and a minimum of 1 pmol of EnGen <sup>®</sup> 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.	<b>Pass</b>
<b>RNase Activity (Extended Digestion)</b> - A 10 $\mu$ l reaction in NEBuffer 4 containing 40 ng of f-300 RNA transcript and a minimum of 1 pmol of EnGen <sup>®</sup> Lba Cas12a (Cpf1) is incubated at 37°C. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.	<b>Pass</b>



Authorized by  
Derek Robinson  
31 Oct 2017



Inspected by  
Fei Liu  
20 Nov 2017

