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New England Biolabs
Product Specification

Product Name:	*EnGen® Lba Cas12a (Cpf1)*
Catalog #:	*M0653T*
Concentration:	*100 µM*
Shelf Life:	*24 months*
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-M0653T v2.0*
Effective Date:	*16 Feb 2018*

Assay Name/Specification (minimum release criteria)
Endonuclease Activity (Nicking) - 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 <10% conversion to the nicked form as determined by agarose gel electrophoresis.
Exonuclease Activity (Radioactivity Release) - A 50 µl reaction in NEBuffer 2.1 containing 1 µg of a mixture of single and double-stranded [^{3}H] *E. coli* DNA and a minimum of 1 pmol of EnGen® Lba Cas12a (Cpf1) incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.
Functional Testing (Targeted Digestion) - 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.
Non-Specific DNase Activity (16 Hour) - 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.
RNase Activity (Extended Digestion) - 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, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.

Date 16 Feb 2018

Derek Robinson
Director of Quality Control

ISO 9001 Registered Quality Management
ISO 14001 Registered Environmental Management
ISO 13485 Registered Medical Devices