NEW ENGLAND BioLabs Inc.
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New England Biolabs
Certificate of Analysis

Product Name:	*Bsu DNA Polymerase, Large Fragment*
Catalog Number:	*M0330L*
Concentration:	*5,000 U/ml*
Unit Definition:	*One unit is defined as the amount of enzyme that will incorporate 10 nmol of dNTP into acid insoluble material in 30 minutes at 37°C.*
Lot Number:	*10038937*
Expiration Date:	*03/2021*
Storage Temperature:	*-20°C*
Storage Conditions:	*25 mM Tris-HCl , 50 mM NaCl , 1 mM DTT , 0.1 mM EDTA , 50 % Glycerol, (pH 7.4 @ 25°C)*
Specification Version:	*PS-M0330S/L v1.0*

Bsu DNA Polymerase, Large Fragment Component List			
NEB Part Number	**Component Description**	**Lot Number**	**Individual QC Result**
M0330LVIAL	Bsu DNA Polymerase, Large Fragment	10035048	**Pass**
B7002SVIAL	NEBuffer™ 2	10033147	**Pass**

Assay Name/Specification	**Lot # 10038937**
Endonuclease Activity (Nicking) A 50 µl reaction in NEBuffer 2 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 50 units of Bsu DNA Polymerase, Large Fragment incubated for 4 hours at 37ºC results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	**Pass**
Exonuclease Activity (Radioactivity Release) A 50 µl reaction in NEBuffer 2 containing 1 µg of a mixture of single and double-stranded [^{3}H] E. coli DNA and a minimum of 50 units of Bsu DNA Polymerase, Large Fragment incubated for 4 hours at 37ºC releases <0.1% of the total radioactivity.	**Pass**
Non-Specific DNase Activity (16 Hour) A 50 µl reaction in NEBuffer 2 containing 1 µg of T3 DNA in addition to a reaction containing Lambda-HindIII DNA and a minimum of 5 units of Bsu DNA Polymerase, Large Fragment incubated for 16 hours at 37ºC results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	**Pass**
Phosphatase Activity (pNPP)	**Pass**

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Assay Name/Specification	Lot # 10038937
A 200 µl reaction in 1M Diethanolamine, pH 9.8, 0.5 mM MgCl2 containing 2.5 mM p-Nitrophenyl Phosphate (pNPP) and a minimum of 100 units Bsu DNA Polymerase, Large Fragment incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.	
Protein Purity Assay (SDS-PAGE) Bsu DNA Polymerase, Large Fragment is ≥ 97% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.	**Pass**
qPCR DNA Contamination (E. coli Genomic) A minimum of 5 units of Bsu DNA Polymerase, Large Fragment 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**
RNase Activity (Extended Digestion) A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 µl of Bsu DNA Polymerase, Large Fragment is incubated at 37ºC. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.	**Pass**
Single Stranded DNase Activity (FAM-Labeled Oligo) A 50 µl reaction in NEBuffer 2 containing a 10 nM solution of a fluorescent internal labeled oligonucleotide and a minimum of 50 units of Bsu DNA Polymerase, Large Fragment incubated for 30 minutes at 37°C yields <10% degradation as determined by capillary electrophoresis.	**Pass**

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

Tony Spear-Alfonso
Production Scientist
10 Jan 2019

Michael Tonello
Packaging Quality Control Inspector
10 Apr 2019