NEW ENGLAND BioLabs® Inc.

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New England Biolabs
Certificate of Analysis

Product Name:	*LongAmp® Taq DNA Polymerase*
Catalog #:	*M0323S/L*
Concentration:	*2,500 units/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 75°C.*
Lot #:	*0171705*
Assay Date:	*05/2017*
Expiration Date:	*5/2019*
Storage Temp:	*-20°C*
Storage Conditions:	*10 mM Tris-HCl , 100 mM KCl , 1 mM DTT , 0.1 mM EDTA , 0.5 % Tween® 20 , 0.5 % IGEPAL® CA-630 , 50 % Glycerol, (pH 7.4 @ 25°C)*
Specification Version:	*PS-M0323S/L v1.0*
Effective Date:	*08 Dec 2016*

Assay Name/Specification (minimum release criteria)	**Lot #0171705**
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 2.5 units of LongAmp® *Taq* DNA Polymerase incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	**Pass**
PCR Amplification (30 kb Human Genomic DNA) - A 25 µl reaction in LongAmp® *Taq* Reaction Buffer in the presence of 300 µM dNTPs and 0.4 µM primers containing 500 ng Human Genomic DNA with 2.5 units of LongAmp® *Taq* DNA Polymerase for 28 cycles of PCR amplification results in the expected 30 kb product.	**Pass**
PCR Amplification (30 kb Lambda DNA) - A 25 µl reaction in LongAmp® *Taq* Reaction Buffer in the presence of 300 µM dNTPs and 0.4 µM primers containing 1 ng Lambda DNA with 2.5 units of LongAmp® *Taq* DNA Polymerase for 28 cycles of PCR amplification results in the expected 30 kb product.	**Pass**
qPCR DNA Contamination (*E. coli* Genomic) - A minimum of 2.5 units of LongAmp® *Taq* DNA Polymerase 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**

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Assay Name/Specification (minimum release criteria)	**Lot #0171705**
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 LongAmp® *Taq* DNA Polymerase 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.	**Pass**

Authorized by
Karen Moreira
08 Dec 2016

Inspected by
David Guo
31 May 2017

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