NEW ENGLAND BioLabs Inc.

240 County Road
Ipswich, MA 01938-2723

Tel 978-927-5054
Fax 978-921-1350

www.neb.com
info@neb.com

New England Biolabs
Certificate of Analysis

Product Name:	*LongAmp® Taq Reaction Buffer Pack*
Catalog #:	*B0323S*
Concentration:	*5X Concentrate*
Lot #:	*0051802*
Assay Date:	*02/2018*
Expiration Date:	*2/2021*
Storage Temp:	*-20°C*
Composition (1X):	*60 mM Tris-SO_4, 20 mM $(NH_4)_2SO_4$, 2 mM $MgSO_4$, 3 % Glycerol, 0.06 % IGEPAL® CA-630, 0.05 % Tween® 20, (pH 9.1 @ 25°C)*
Specification Version:	*PS-B0323S v1.0*
Effective Date:	*05 Mar 2018*

Assay Name/Specification (minimum release criteria)	**Lot #0051802**
Endonuclease Activity (Nicking, Buffer) - A 50 µl reaction in 2X LongAmp® *Taq* Reaction Buffer containing 1 µg of supercoiled PhiX174 DNA incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	**Pass**
Non-Specific DNase Activity (16 hour, Buffer) - A 50 µl reaction in 2X LongAmp® *Taq* Reaction Buffer containing 1 µg of T3 DNA in addition to a reaction containing Lambda-HindIII DNA 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, Buffer) - A 25 µl reaction in 1X 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, Buffer) - A 25 µl reaction in 1X 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**
pH (buffers/solutions) - The pH of 5X LongAmp® *Taq* Reaction Buffer is between pH 9.0 and 9.2 at 25°C.	**Pass**
Phosphatase Activity (pNPP, Buffer) - A 200 µl reaction in 1M Diethanolamine @ pH 9.8 and 0.5 mM $MgCl_2$ containing 2.5 mM *p*-Nitrophenyl Phosphate (pNPP) and a minimum of 80 µl LongAmp® *Taq* Reaction Buffer incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.	**Pass**

NEW ENGLAND BioLabs Inc.

240 County Road
Ipswich, MA 01938-2723

Tel 978-927-5054
Fax 978-921-1350

www.neb.com
info@neb.com

New England Biolabs
Certificate of Analysis

Assay Name/Specification (minimum release criteria)	**Lot #0051802**
qPCR DNA Contamination (*E. coli* Genomic, Buffer) - A minimum of 1 µl of LongAmp® *Taq* Reaction Buffer 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 Assay (4 Hour 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* Reaction Buffer is incubated at 37°C. After incubation for 4 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.	**Pass**

Authorized by
Lynne Apone
05 Mar 2018

Inspected by
Tony Spear-Alfonso
13 Apr 2018

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