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New England Biolabs Certificate of Analysis

Product Name: LongAmp® Taq Reaction Buffer Pack

Catalog #: B0323S

Concentration: 5X Concentrate

Lot #: 0031706

Assay Date: 06/2017

Expiration Date: 6/2020

Storage Temp: -20°C

Composition (1X): 60 mM Tris-SO₄, 20 mM (NH₄)₂SO₄, 2 mM MgSO₄, 3 % Glycerol, 0.06 % IGEPAL® CA-630, 0.05 % Tween® 20,

(pH 9.1 @ 25°C)

Specification Version: PS-B0323S v1.0 Effective Date: 10 May 2017

Assay Name/Specification (minimum release criteria)	Lot #0031706
Endonuclease Activity (Nicking, Buffer) - A 50 μl reaction in 2X LongAmp® <i>Taq</i> 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® <i>Taq</i> 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® <i>Taq</i> 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® <i>Taq</i> 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® <i>Taq</i> 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® <i>Taq</i> DNA Polymerase for 28 cycles of PCR amplification results in the expected 30 kb product.	Pass
pH (buffers/solutions) - The pH of 5X LongAmp® <i>Taq</i> 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 <i>p</i> -Nitrophenyl Phosphate (pNPP) and a minimum of 80 µl LongAmp® <i>Taq</i> Reaction Buffer incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.	Pass









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Assay Name/Specification (minimum release criteria)	Lot #0031706
qPCR DNA Contamination (<i>E. coli</i> Genomic, Buffer) - A minimum of 1 μ l of LongAmp® Taq Reaction Buffer is screened for the presence of <i>E. coli</i> genomic DNA using SYBR® Green qPCR with primers specific for the <i>E. coli</i> 16S rRNA locus. Results are quantified using a standard curve generated from purified <i>E. coli</i> genomic DNA. The measured level of <i>E. coli</i> genomic DNA contamination is ≤ 1 <i>E. coli</i> genome.	Pass
RNAse Activity Assay (4 Hour Digestion) - A 10 μ l reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 μ l 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 Karen Moreira 10 May 2017

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Inspected by
Tony Spear-Alfonso

15 Jun 2017