

## New England Biolabs Certificate of Analysis

**Product Name:** LongAmp® Hot Start Taq DNA Polymerase  
**Catalog Number:** M0534S  
**Concentration:** 2,500 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 75°C.  
**Packaging Lot Number:** 10165609  
**Expiration Date:** 07/2024  
**Storage Temperature:** -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-M0534S/L v2.0

LongAmp® Hot Start Taq DNA Polymerase Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0534SVIAL	LongAmp® Hot Start Taq DNA Polymerase	10164364	Pass
B0323SVIAL	LongAmp® Taq Reaction Buffer	10161170	Pass

Assay Name/Specification	Lot # 10165609
<p><b>Non-Specific DNase Activity (16 Hour)</b>            A 50 µl reaction in NEBuffer 2 containing 1 µg of T3 or T7 DNA in addition to a reaction containing Lambda-HindIII DNA and a minimum of 2.5 units of LongAmp® Hot Start 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.</p>	Pass
<p><b>PCR Amplification (30 kb Lambda DNA)</b>            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® Hot Start Taq DNA Polymerase for 28 cycles of PCR amplification results in the expected 30 kb product.</p>	Pass
<p><b>PCR Amplification (30 kb Human Genomic DNA)</b>            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® Hot Start Taq DNA Polymerase for 28 cycles of PCR amplification results in the expected 30 kb product.</p>	Pass

Assay Name/Specification	Lot # 10165609
<p><b>PCR Amplification (Hot Start, Human Genomic DNA)</b> A 50 µl reaction in LongAmp® Taq Reaction Buffer in the presence of 200 µM dNTPs and 0.2 µM primers containing 2 ng Human Genomic DNA with 5 units of LongAmp® Hot Start Taq DNA Polymerase for 35 cycles of PCR amplification results in the expected 306 bp product, and a decrease in non-specific genomic bands after pre-incubation at room temperature for 1 hour, when compared to a non-hot start control reaction.</p>	<b>Pass</b>
<p><b>RNase Activity (Extended Digestion)</b> 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® Hot Start Taq DNA Polymerase is incubated at 37°C. After incubation for 16 hours, &gt;90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.</p>	<b>Pass</b>
<p><b>qPCR DNA Contamination (E. coli Genomic)</b> A minimum of 2.5 units of LongAmp® Hot Start 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.</p>	<b>Pass</b>
<p><b>Inhibition of Primer Extension (Hot Start, Radioactivity Incorporation)</b> A 50 µl primer extension assay in ThermoPol® Reaction Buffer in the presence of 200 µM dNTPs including [ <sup>3</sup>H]-dTTP, containing 15 nM primed single-stranded M13mp18 with 10 units of LongAmp® Hot Start Taq DNA Polymerase incubated for 16 hours at 25°C yields &gt;95% inhibition when compared to a non-hot start control reaction.</p>	<b>Pass</b>

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

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