

New England Biolabs Certificate of Analysis

Product Name: Q5[®] High-Fidelity 2X Master Mix
 Catalog Number: M0492L
 Concentration: 2 X Concentrate
 Lot Number: 10041820
 Expiration Date: 02/2021
 Storage Temperature: -20°C
 Specification Version: PS-M0492S/L v1.0
 Composition (1X): Proprietary

Q5 [®] High-Fidelity 2X Master Mix Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0492SVIAL	Q5 [®] High-Fidelity 2X Master Mix	10032990	Pass

Assay Name/Specification	Lot # 10041820
<p>Endonuclease Activity (Nicking, Polymerase, dNTP) A 50 µl reaction in NEBuffer 2 in the presence of 400 µM dNTPs containing 1 µg of supercoiled pUC19 DNA and a minimum of 10 units of Q5[®] High-Fidelity DNA Polymerase incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>	Pass
<p>Non-Specific DNase Activity (16 hour, Buffer) A 50 µl reaction in 1X Q5[®] High-Fidelity Master Mix 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.</p>	Pass
<p>PCR Amplification (20 kb Lambda DNA, Master Mix) A 50 µl reaction in 1X Q5[®] High-Fidelity Master Mix and 1.0 µM primers containing 10 ng Lambda DNA for 22 cycles of PCR amplification results in the expected 20 kb product.</p>	Pass
<p>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 Q5[®] High-Fidelity 2X Master Mix 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.</p>	Pass

Assay Name/Specification	Lot # 10041820
<p>qPCR DNA Contamination (E. coli Genomic) A minimum of 2 units of Q5[®] High-Fidelity 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>	Pass
<p>Protein Purity Assay (SDS-PAGE) Q5[®] High-Fidelity DNA Polymerase is $\geq 95\%$ pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p>	Pass
<p>Phosphatase Activity (pNPP) 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 of Q5[®] High-Fidelity DNA Polymerase incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.</p>	Pass
<p>PCR Amplification (7 kb Human Genomic DNA, Master Mix) A 50 μl reaction in 1X Q5[®] High-Fidelity Master Mix and 0.5 μM primers containing 20 ng Human Genomic DNA for 30 cycles of PCR amplification results in the expected 7 kb product.</p>	Pass

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



Christie Vazquez
Production Scientist
08 Feb 2019



Josh Hersey
Packaging Quality Control Inspector
16 Apr 2019