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New England Biolabs Certificate of Analysis

Product Name: Q5U™ Hot Start High-Fidelity DNA Polymerase

Catalog Number: M0515L 2,000 U/ml Concentration:

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 74°C.

Packaging Lot Number: 10145598 Expiration Date: 02/2024 Storage Temperature: -20°C Storage Conditions: Proprietary

PS-M0515S/L v1.0 Specification Version:

Q5U™ Hot Start High-Fidelity DNA Polymerase Component List				
NEB Part Number	Component Description	Lot Number	Individual QC Result	
M0515LVIAL	Q5U™ Hot Start High-Fidelity DNA Polymerase	10141003	Pass	
B9037SVIAL	Q5U™ Reaction Buffer	10126819	Pass	

Assay Name/Specification	Lot # 10145598
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 Q5U™ Hot Start High-Fidelity 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
qPCR DNA Contamination (E. coli Genomic) A minimum of 2 units of Q5U™ Hot Start 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.	Pass
PCR Amplification (7 kb Human Genomic DNA) A 50 µl reaction in Q5U™ Reaction Buffer in the presence of 200 µM dNTPs and 0.5 µM primers containing 20 ng Human Genomic DNA with 1 unit of Q5U™ Hot Start High-Fidelity DNA Polymerase for 30 cycles of PCR amplification results in the expected 7 kb product.	Pass



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Assay Name/Specification	Lot # 10145598
PCR Amplification (Bisulfite Converted DNA) A 25 μl reaction in Q5U TM Reaction Buffer in the presence of 200 μM dNTPs and 0.5 μM primers containing 10 ng bisulfite-converted human genomic DNA with 0.5 units of Q5U TM Hot Start High-Fidelity DNA Polymerase for 35 cycles of PCR amplification results in the expected 534 bp product.	Pass
Endonuclease Activity (Hot Start, Nicking) 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 Q5U™ 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.	Pass
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 Q5U™ High-Fidelity DNA Polymerase incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.	Pass
PCR Amplification (20 kb Lambda DNA) A 50 μl reaction in Q5U™ Reaction Buffer in the presence of 200 μM dNTPs and 1.0 μM primers containing 10 ng Lambda DNA with 1 unit of Q5U™ Hot Start High-Fidelity DNA Polymerase for 22 cycles of PCR amplification results in the expected 20 kb product.	Pass
Protein Purity Assay (SDS-PAGE) Q5U™ High-Fidelity DNA Polymerase is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.	Pass

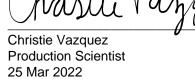
This product has been tested and shown to be in compliance with all specifications.

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25 Mar 2022