

New England Biolabs Certificate of Analysis

Product Name: OneTaq® Hot Start DNA Polymerase
Catalog Number: M0481L
Concentration: 5,000 U/ml
Unit Definition: One unit is defined as the amount of enzyme that will incorporate 15 nmol of dNTP into acid insoluble material in 30 minutes at 75°C.
Packaging Lot Number: 10063190
Expiration Date: 10/2021
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-M0481S/L/X v1.0

OneTaq® Hot Start DNA Polymerase Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0481LVIAL	OneTaq® Hot Start DNA Polymerase	10052138	Pass
B9026AVIAL	OneTaq® High GC Enhancer	10031487	Pass
B9023SVIAL	OneTaq® GC Reaction Buffer	10034012	Pass
B9022SVIAL	OneTaq® Standard Reaction Buffer	10034011	Pass

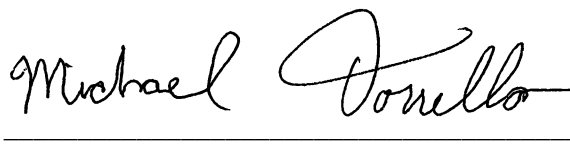
Assay Name/Specification	Lot # 10063190
RNase Activity (Extended Digestion) A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 µl of OneTaq® Hot Start DNA Polymerase is incubated at 37°C. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.	Pass
PCR Amplification (5.0 kb Lambda DNA) A 25 µl reaction in OneTaq® Standard Reaction Buffer in the presence of 200 µM dNTPs and 0.2 µM primers containing 5 ng Lambda DNA with 0.625 units of OneTaq® Hot Start DNA Polymerase for 25 cycles of PCR amplification results in the expected 5.0 kb product.	Pass
PCR Amplification (Hot Start 2 kb Lambda DNA) A 25 µl reaction in OneTaq® Standard Reaction Buffer in the presence of 200 µM dNTPs and 0.2 µM primers containing 10 pg Lambda DNA and 50 ng Human Genomic DNA with 0.625 units of OneTaq® Hot Start DNA Polymerase for 30 cycles of PCR amplification results in an increase in yield of the 2 kb Lambda product and a decrease in	Pass

Assay Name/Specification	Lot # 10063190
non-specific genomic bands when compared to a non-hot start control reaction.	
<p>PCR Amplification (Enhancer Dependent, >70% GC-rich) A 25 µl reaction in OneTaq® GC Reaction Buffer and 20% OneTaq® High GC Enhancer in the presence of 200 µM dNTPs and 0.2 µM primers containing 10 ng Human Genomic DNA with 0.625 units of OneTaq® Hot Start DNA Polymerase for 30 cycles of PCR amplification results in the enhancer-dependent production of the expected 627 bp product.</p>	Pass
<p>PCR Amplification (Buffer Dependent, >65% GC-rich) A 25 µl reaction in OneTaq® GC Buffer in the presence of 200 µM dNTPs and 0.2 µM primers containing 10 ng Human Genomic DNA with 0.625 units of OneTaq® Hot Start DNA Polymerase for 30 cycles of PCR amplification results in the buffer-dependent production of the expected 737 bp product.</p>	Pass
<p>Non-Specific DNase Activity (16 Hour) A 50 µl reaction in NEBuffer 2 containing 1 µg of T3 DNA in addition to a reaction containing Lambda-HindIII DNA and a minimum of 5 units of OneTaq® Hot Start 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>Inhibition of Primer Extension (Hot Start, Radioactivity Incorporation) A 50 µl primer extension assay in ThermoPol® Reaction Buffer in the presence of 200 µM dNTPs including [³H]-dTTP, containing 15 nM primed single-stranded M13mp18 with 2.5 units of OneTaq® Hot Start DNA Polymerase incubated for 16 hours at 25°C yields >95% inhibition when compared to a non-hot start control reaction.</p>	Pass

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



Christie Vazquez
Production Scientist
21 Nov 2019



Michael Tonello
Packaging Quality Control Inspector
02 Jan 2020