NEW ENGLAND BioLabs Inc.
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New England Biolabs
Certificate of Analysis

Product Name:	*Multiplex PCR 5X Master Mix*
Catalog Number:	*M0284S*
Concentration:	*5 X Concentrate*
Lot Number:	*10018521*
Expiration Date:	*03/2020*
Storage Temperature:	*-20°C*
Specification Version:	*PS-M0284S v1.0*
Composition (1X):	*20 mM Tris-HCl (pH 8.9 @ 25°C), 50 mM KCl, 30 mM NH4Cl, 2.5 mM MgCl2, 0.3 mM dATP, 0.3 mM dCTP, 0.3 mM dGTP, 0.3 mM dTTP, 3.2 % Glycerol, 0.08 % IGEPAL® CA-630, 0.07 % Tween® 20, 67 units/ml Taq DNA Polymerase*

Multiplex PCR 5X Master Mix Component List			
NEB Part Number	**Component Description**	**Lot Number**	**Individual QC Result**
M0284SVIAL	Multiplex PCR 5X Master Mix	0221803	**Pass**

Assay Name/Specification	**Lot # 10018521**
Endonuclease Activity (Nicking) A 50 µl reaction in ThermoPol® Reaction Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 20 units of Taq DNA Polymerase incubated for 4 hours at either 37°C or 75ºC 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 Multiplex PCR Master Mix containing 1 µg of T3 DNA in addition to a reaction containing Lambda-HindIII DNA incubated for 16 hours at 37ºC results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	**Pass**
PCR Amplification (15-plex PCR, Master Mix) A 25 µl reaction in 1X Multiplex PCR Master Mix and 0.15 µM primer mix containing 10 ng Human Genomic DNA for 35 cycles of PCR amplification results in the expected 15 products.	**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 Taq DNA Polymerase incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity	**Pass**

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Assay Name/Specification	Lot # 10018521
as determined by spectrophotometric analysis.	
Protein Purity Assay (SDS-PAGE) Taq DNA Polymerase is ≥ 99% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.	**Pass**
qPCR DNA Contamination (E. coli Genomic) A minimum of 5 units of 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.	**Pass**
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 Multiplex PCR 5X Master Mix is incubated at 37ºC. After incubation for 4 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.	**Pass**
Single Stranded DNase Activity (FAM-Labeled Oligo) A 50 µl reaction in ThermoPol® Reaction Buffer containing a 10 nM solution of a fluorescent internal labeled oligonucleotide and a minimum of 25 units of Taq DNA Polymerase incubated for 30 minutes at either 37°C or 75°C yields <10% degradation as determined by capillary electrophoresis.	**Pass**

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

Lynne Apone
Production Scientist
08 Aug 2018

Michael Tonello
Packaging Quality Control Inspector
08 Aug 2018