NEW ENGLAND BioLabs Inc.
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New England Biolabs
Certificate of Analysis

Product Name:	*Deoxynucleotide (dNTP) Solution Set*
Catalog Number:	*N0446S*
Concentration:	*100 mM*
Unit Definition:	*N/A*
Packaging Lot Number:	*10179861*
Expiration Date:	*12/2024*
Storage Temperature:	*-20°C*
Storage Conditions:	*Supplied in Ultrapure water as a sodium salt (pH 7.5)*
Specification Version:	*PS-N0446S/V v3.0*

Deoxynucleotide (dNTP) Solution Set Component List			
NEB Part Number	**Component Description**	**Lot Number**	**Individual QC Result**
N0443SVIAL	dTTP	10174048	**Pass**
N0442SVIAL	dGTP	10174047	**Pass**
N0441SVIAL	dCTP	10174046	**Pass**
N0440SVIAL	dATP Solution	10174045	**Pass**

Assay Name/Specification	**Lot # 10179861**
Endonuclease Activity (Nicking) A 50 µl reaction in NEBuffer 2 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 1 µl of dATP, dCTP, dGTP, and dTTP incubated for 4 hours at 37ºC results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	**Pass**
Non-Specific DNase Activity (16 Hour) 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 4 µl of dATP, dCTP, dGTP, and dTTP 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 (0.5 kb Lambda, dNTPs) A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dCTP, dGTP, and dTTP and 0.2 µM primers containing 1 ng Lambda DNA with 1.25 units of Taq DNA Polymerase for 25 cycles of PCR amplification results in the expected 0.5 kb product.	**Pass**
PCR Amplification (2.0 kb Lambda, dNTPs) A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dCTP,	**Pass**

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Assay Name/Specification	Lot # 10179861
dGTP, and dTTP and 0.2 µM primers containing 1 ng Lambda DNA with 1.25 units of Taq DNA Polymerase for 25 cycles of PCR amplification results in the expected 2.0 kb product.	
PCR Amplification (5.0 kb Lambda, dNTPs) A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dCTP, dGTP, and dTTP and 0.2 µM primers containing 1 ng Lambda DNA with 1.25 units of Taq DNA Polymerase for 25 cycles of PCR amplification results in the expected 5.0 kb product.	**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 16 µl of dATP, dCTP, dGTP, and dTTP incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.	**Pass**
Physical Purity (HPLC) dATP, dCTP, dGTP, and dTTP is ≥ 99% pure as determined by HPLC analysis.	**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 dATP, dCTP, dGTP, and dTTP is incubated at 37ºC. 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 1 µl of dATP, dCTP, dGTP, and dTTP 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**

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

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08 Mar 2023