

New England Biolabs Certificate of Analysis

Product Name: *dUTP Solution*
Catalog Number: *N0459S*
Concentration: *100 mM*
Packaging Lot Number: *10100723*
Expiration Date: *01/2023*
Storage Temperature: *-20°C*
Storage Conditions: *Supplied in Ultrapure water as a sodium salt (pH 7.5)*
Specification Version: *PS-N0459S v1.0*

dUTP Solution Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
N0459SVIAL	dUTP Solution	10099629	Pass

Assay Name/Specification	Lot # 10100723
<p>PCR Amplification (2.0 kb Lambda, dNTPs) A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dGTP, dCTP, and dUTP and 0.5 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.</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 dUTP Solution 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.</p>	Pass
<p>PCR Amplification (0.5 kb Lambda, dNTPs) A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dGTP, dCTP, and dUTP and 0.5 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.</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 4 µl of dUTP Solution incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.</p>	Pass

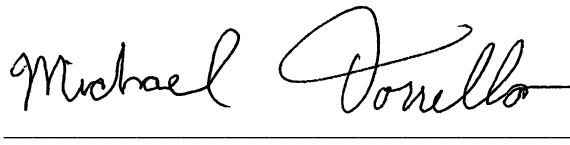
Assay Name/Specification	Lot # 10100723
<p>Physical Purity (HPLC) dUTP Solution is $\geq 99\%$ pure as determined by HPLC analysis.</p>	Pass
<p>Non-Specific DNase Activity (16 Hour) A 50 μl reaction in NEBuffer 2 containing 1 μg of T3 or T7 DNA in addition to a reaction containing Lambda-HindIII DNA and a minimum of 10 μl of dUTP Solution 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>qPCR DNA Contamination (E. coli Genomic) A minimum of 1 μl of dUTP Solution 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>Endonuclease Activity (Nicking) A 50 μl reaction in NEBuffer 2 containing 1 μg of supercoiled PhiX174 DNA and a minimum of 1 μl of dUTP Solution incubated for 4 hours at 37°C results in $<10\%$ conversion to the nicked form as determined by agarose gel electrophoresis.</p>	Pass

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

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Production Scientist
26 Feb 2021



Michael Tonello
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26 Feb 2021